Feb 87 - May 88

3

Feb 87 - May 88

Spectr. Temp

Focus .....

Spectr. Temp

Exp. Mtr.	S

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
									David Dunlap Observatory		
									74" Logbook		
									Vol 61		
									Plate Nos 49897 - 50261		
									Feb. 1987 - May 1988		

5

Emulsion Batches:

Date Feb 24/25 1987 Observers BOL; MKL-RJ

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.	Eq. Mtr.
SP0003 388	COMP	06 05.4	25 02	19:37	19:40			Fe A A¼	200	400
389	HD 42397	"	"	19:43	19:48				300	4000
390	COMP			19:51	19:55			Fe A A¼	200	400
391	DARK			19 50	20:08					
392	COMP			20:17	20:20			Fe A A¼	200	478
393	V471 TAU	03 44.7	+ 16° 57	20:21	20:41				1200	1500
394	V471 TAU	"	"	20:44	21:05				+1200	
395	COMP			21:07	21:10			Fe A A¼	200	
396	V471 TAU	03 44.7	+16° 57	21:12	21:32				1200	
397	V471 TAU	"	"	RESTART 0149 21:35	22:02			AAP	+1200	
398	COMP			22:04	22:07			Fe A A¼	200	
399	V471 TAU			22:10	22:30				1200	
400	"	"	"	22:30	22:50				+1200	500
401	COMP	"	"	22:53	22:56			Fe A A¼	200	
402	DARK									

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... 6..

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Filter	Comparison Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	20	400		8.03	GOTO IV	P.C.	1200/42.1/4480	R.S.	H&D			STELLAR IN CH "A"	
	30	4000		"	"	P.C.S.	1200/42.1/4480	R.S.	H&D				
	20	400				P.C.S.	1200/42.1/4480	R.S.	H&D				
	20	478				P.C.S.	1200/42.1/4480	R.S.	H&D			9ELE REVERSED	
	1200	1500		V= 9.4-9.7	"	P.C.S.	1200/42.1/4480	R.S.	H&D				
	1200			"	"	"	"	"	"				
	20			V= 9.4 9.7		P.C.S.	1200/42.1/4480	R.S.	H&D				
	1200			"		"	"	"	H&D				
				"	"	"	"	"	"			SYSTEM CRASH	
	20			"	"	"	"	"	"				
	1200			"	"	"	"	"	"				
	1200	800		"	"	"	"		"				
	20												

7

Date Feb 24/25/87 Observers BOI-MKI-R

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.	Exp. Mtr.
403	COMP		1986	23:22	23:24			FeII A½	200	
404	BM CAS	00 53.9	+64°00	23:28	23:48				120	180
405	COMP			23:50	23:53			FeA A½	200	
406	COMP			23:56	23:58			FeA A½	200	
407	BM CAS			00:00	00:30				1800	30
408	COMP			00:32	00:35			FeA A½	200	
409	PARA									
410	COMP			00:50	00:53			FeA A½	200	
411	COMP			01:22	01:25			FeA A½	200	360
412	HD 86801	9 55.8	+29 02	01:27	01:32				300	300
413	COMP			01:35	01:38			FeA A½	200	
414	COMP			01:42	01:45			FeA A½	200	
415	HD 86801	9 55.8	+29° 02	01:46	01:51				300	300
416	COMP			01:54	01:57			FeA A½	200	
417	COMP			02:04	02:07			FeII A½	200	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 8

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200					P.C.S.	1200 / 4480 42.1	2S	HA				
120	1000		V= 8.8	A7	P.C.S	1200 / 4480 42.1	R.S	HA				
200					"	1200 / 3860 36.5	R.S.	5160Å				
200					"	"	"	"				
1800	350		V= 8.8	A7	P.C.S.	1200 / 3860 36.5	R.S.	5160Å				
200					P.C.S.	1200 / 3860 36.5	R.S.	5160Å				
					"	"	"	"				
200					"	"	"	"				
200	360				"	"	"	"			REQUESTED NEW FLAT ON BRIGHT	
300	2500		V= 8.9	G0V	"	"	"	"				
200					"	1200 / 3860 36.1	"	5160Å		STD VEL		
200						1200 / 4480 42.1	2S	HA				
300	2500		V= 8.8	G0V		"	"	"				
200						"	"	"		STD VEL		
200						1200 / 3860 36.5	R.S	5160Å				

9 PS#3

Date Feb 25/87 Observers BDI-Mki-Ri

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.	Exp. Mtr.
SP0004 18	AW UMA "B"	11 24.9	+30°31	02:09	02:39				1200	800
419	COMP			02:42	02:45			FeA A-4	2m	
420	COMP			03:03	03:06			FeA A-4	2m	
421	HD112299	1250.6	+26 16	03:07	03:12				300	1700
422	COMP			03:14	03:17			FeA A-4	2m	
423	DARK			0						
424	FLAT FIELD			03:45				TUNG A-4	14400	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 10

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
120s	500				P.C.S.	1200/3860 36.5	RS	5160Å				
20s					〃	〃	〃	〃				
30s					〃	〃	〃	〃				
30s	1750		8.6	F8V	〃	〃	〃	〃		STD VEL		
20s			〃		〃	〃	〃	〃				
1440s					P.C.S.	1200/4480 42.1	RS.	Hα				

11 Wed. Thurs Tour

Date Feb. 25-26/82 Observers KBt-Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP0004426	Dark				*				
~~FILE DELETED~~ ~~SP0004427~~	FLAT FLD	0 Hrs	+43°	18:00	19 28	0h 0m	zenith	Tung A¼	
~~FILE DELETED~~ ~~428~~	Dark	while moving		19:30					
	Comp Polaris B							FeA H 1/8	200
SP0004427	Flat Field			21:11	22 41	0h	zenith	Tung A 1/8	
428	Dark while setting telescope.								
430	Comp for AW UMa "B"							FeA A 1/4	200
431	AW UMa "B"	1900 11 24.9	1900 +30 31				+30 13		
"	Comp for AW UMa "B"							FeA 1/4	200
	" " "							"	"
435	AW UMa "B"	1900 11 24.9	1900 +30 31	23 50	00 20				
436	Comp for AW UMa "B"							FeA A 1/4	
437	BM Cas	1986 0 53.9	+64		Comp	#438		"	200
	~~Comp for BM Cas~~								

Spectr. Temp. ..... Dome Temp./Hum. -1.°C/53.% Transparency Conditions . Fine ..... 12.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../..... Dark 2 160/sec @ 1730

Dome T = 0 °C

Exp. Mtr. PCS A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS ~~BC~~		NA ~~RS~~	* Dark ended before intended time ie 561 secs, not 14400 secs				
1100, 270	ND 1·2+2·3			BC	1800/4900 46°	150μ slit	HB		5,240 secs	Decker out all the way	
440, 230				BC	1800/4900 46°	150μ slit	HB		Setup with	decker out	
				"	"	"	"		Star in Top	Left window of TV image	
For Some Time, I had forgotten about adjustment of flat mirror when going to Slit.											
1200, 700				BC	1200/4480 42.1	~~RS~~	Hα				
330, 200				BC	1200/4480 42.1	RS	Hα				
				"	"					RA 1987 11 29.5	
200, 290				-	10 1	RS					
" 200, 280				"	1200/3860 36.5°	RS	5160 II				
200, 240				"	"	"	"		1800 sec		
									+200	No "CB". In mixed with previous Exp	
				BC	1200/4480 42.10	RS	Hα			* reversed of course	

13 pg #2

Emulsion Batches:

Date ..... Observers Mki. - T.m.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
439	BM Cass					1200sec +	600sec		
440	Comp for BM Cass							FoA A 1/4	200
441	Comp for BM Cass								
442	BM Cass	attempt but saved							
443	Comp for HD 132737								
444	HD 132737	14 55.6	+27 33						
445	Comp for HD 132737								
	" " "	@ H∠						FoA H 1/4	200
	HD 132737						+27 18		
	Comp for HD 132737 @ H∠							FoA H 1/4	200
	Comp Labelled "Dark" on header for				NGC 4151	(aborted exp of same)			
	Comp for NGC 4151							FoA A 1/4	200
	NGC 4151								
	Comp for NGC 4151			0332					
	Comp for HD 140913								
455	HD 140913	15 41.1	+26 47						

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

PCS

Exp. Mtr. A, B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS BC	1200/4480 42.10	RS	H-α			Some Cloud	
				"	"	"	"				
				"	1200/3460 36.5°	"	5160Å				
				"	"	"	"				
390, 240				"	"	"	"				
				"	"	"	"				
				"	"	"	"				
				"	1200/4480 42.10	"	H-α			thin clouds H-86%	
				"	"	"	"				
				"	"	"	"				
				"	"	"	"				
				"	1200/4480 42.10	RS	H-α				
				"	"	V	"				
				"	"	"	"				
		8.21	G0V	"	"	"	"		std ref		
		"	"	"	"	"	"		"		

15 Pg #3

Emulsion Batches: .....

Date Feb. 25-26. 1987 Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
456	Comp for HD 140913							FeA A 1/4	300
457	" Nova Her	1987 18 43 02	+15 19						
458	Nova Her	"	"						
459	Comp for Nova								
460	" " "								
461	Nova Her					1200secs			
462	Comp for Nova								
63	Comp for Nova							FeA A 1/8	100
64	Nova Her								
65	Comp							FeA A 1/8	100
66	Dark	15 mins							
467	Flat Field			0609		0 0	Zenith	Tung A 1/4	2hrs

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 16

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 100%

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
350, 250				PCS BS	1200/4480 42.10	RS	Hα				
400, 260				"	"	"	"				
1100, 200				"	"	"	"			cloud at end	
				"	"	"	"				
				"	1200/3750 35.7	"	4900Å HB + He				
				"	"	"	"				
				"	"	"	"				
					1200/3014 47°	"	7800Å				
400, 180					"	"	"			clouds fog H = 97%	
					"	"	"				
2400, 3400				PC	1200/5014 47°	RS	7800A	Note	2500 => 3500 cnts Right for Flat		

17

Emulsion Batches:

Date Feb 26-27/87 Observers MKS-Tu

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
468	Flat Field			16 12	18 12	0 0	Zenith	Tung A 1/4	2½5
469	Dark *			18 30	18 50	~~0~~ moving			
470	Comp for BM Cass			18 55				Fe A A 1/4	200
471	BM Cass	1986.3 00 53.9	+64 01	19 02				1200sec	
472	Comp for "	IB Buffer							200
473	" "								
	BM Cass	00 53.9	+64 01	1940	2010			1800sec	
	Comp for BM Cass				2018				
	BM Cass	00 53.9		2019				1500sec	
	Comp for BM Cass								200
	Comp for SV								
	HD 75935	1900 08 47.9	1900 +27 18	21 14				300sec	
	Comp for Stwcl								
	Comp for AW								
483	AW Unq "B"	1900 11 24.9	1900 +30 31	21 40				1800sec	
	Comp								

Spectr. Temp. ..... Dome Temp./Hum. 28 F. / 53% Transparency Conditions . Part Cloudy ..... 18..

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... /

PCS

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst. PCS	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2700,	4100				BC	1200 / G4480 42.1°	RS	NO-9+	2.3	Hα		
					"	"	"				(Labeled Tungsten)	
						"	"					
2400,	300	OK				"	"			Hα	Reversal	
						"	"					
						1200/G3860 36.5°	"			5160 Å		
500,	250				"	"	"			"	some cloud	
					"	"	"			"		
					"	"	"			"		
					"	"	"			"		
					"	"	"					
1000,	300			G8V	"	"	"			std vel	Fainter of 2 stars at same dec	
					"	"	"				Park 1 220/sec	
400,	300				"	"	"					
500,	250				"	"	"			Header	entered as FeAr	
					"	"	"					

19 #2

Date ..... Observers .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
485	H W Uma "B"	11 24.9	+30 31	22 18	22 48				
	Comp "								
	Dark								1/60 sec
	HD 75935	8 47.9	+27 18	23 04		Comp before #			
	Comp for Std Fld								
	" " "	@ Hd							
	HD75935			23 35	23 55			120 secs	
	Comp								
	Comp for HD86986								
494	HD 86986 ??	10 14.87 1.8	+14 37						
495	Comp for "								
496	Dark			00 54				15 mins	
497	Flat Fld								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... cloudy ..... 20.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 1737

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS BS	1200/6386 36.50	RS	5160Å				
					"						
					"					D=210/sec	
	1200 secs				"						
					1200/4480	RS	Hα				
800,270					"						
					"	"	"			Fld Cor MD 86°66	
							"				
							"				
							"				
200/sec - 190/sec 2809 4400										N	

21 Fri Sat

Date Feb 27-28/87 Observers Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparisor Type/Filter	Exp.
498	Flat Field	2 hrs		16 39	18 39	0 0	Zenith	Tung A1/4	
	Crash after Typing	IB	after "CB ing" IB						
499	Dark	1800 sec	Dark = 250/sec			0 0	Zenith		
March 3-4 Tn, Tests only - Dome T at 18h = -4°C									
SP000508	Dark	3600 secs	≈200 cnts/sec			0 0	platform		
501	Flat Field	3600 secs	(ND 2.3 + .9)			0 0	0°	Tung A1/4	
		Dark	cnt ≈ 180/sec	@ 02h EST			Dec +4		
	Hartman Focus		Comp						
	"	"	Stellar						
	"	"	Comp	semi large	CCW rotation				
	"	"	Stellar						
	∴ CCW Focus rotation moves lines Red, but both Stellar & Comp are								

Spectr. Temp. ..... Dome Temp./Hum. ..... 19°/0 Transparency Conditions ..... Cloudy ..... 22.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Crash @ 18:50

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					PCS BC	1200/421 G 4480	RS	Hα				
		Dark @ 23hr ~ 220/sec										
	H2 B 2776,4390				PCS BC	1200/421 G 4480	RS	Hα			(note: .8 ND filter over RS had slipped off, maybe during exposure)	
	Dome T = −6.5 °C											
								very close to each other		2330 s ~~Left edge Good Res~~		
										~~2330 s more Left edge (5th x 1/4 Res)~~		
								close	S1	Red of 2330 ~~6 pixel less~~		
									"	" " " ~~6 pixel~~		
	not noticably shifted Relative to each other in those 2 cases.											

23 Wed-Thurs

Date March 4-5 1887 Observers Mki-Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
SP000502	Dark					0 0			
503	Flat Field			18 14		0 0	+6°	Tung A 1/4	
4	Dark - while going		Reversed						
5	Comp								
6	V471 TAU	03 44.7	+16 57	19 39			+17 09		
7	Comp								
8	" for BM Cass			20 28				Fe A 1/4	
9	BM Cass	1986.3 00 53.9	+64 01	20 32					
510	Comp for BM Cass								
511	Comp for BM Cas.	@ 5160 Å						Fe A 1/4	
512	BM Cass	00 53.9	+64 01	21 05	21 25				
513	" "	1200 + 1200		21 28	21 46				
514, 515	Comparison.								
516	BM Cas.								
517	BM Cass			22 19					
518	Comp								

Spectr. Temp. ..... Dome Temp./Hum. -2°C./60% Transparency Conditions So So 24

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... [Times 33 sec. SLOW]

Comparison Filter Exp	Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	2400, 4200	ND 2.3 + 0.6			BC	1200/42.1 G 4480	RS	Hα				
					"	"	"	"			Reversed	
					"	"	"	"			"	
	1600, 210	OK			"	"	"	"			getting cloudy ok for this exp	
	420, 270				"	"	"	"			cloudy	
	440, 300				"	"	"	"				
	2000, 300	OK			"	"	"	"	IA		semi cloudy	
					"	"	"	"	IA			
					"	1200/36.5 G 3860	"	5160 Å	IA			
	1000, 200				"	"	"	"	IA			
	1100, 200				"	"	"	"	"			
					"	"	"	"	"			
	2000 1, 220				"	"	"	"	"		Terrific counts.	
	"				"	"	"	"	"			
					"	"	"	"	"			

25 P9#2

Date ..Mar. 4-5.1.87... Observers .....

Emulsion Batches:
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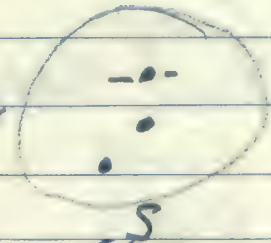
Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
519	Dark								
520	Comp	NO CB of previous		Dark				FeA H1/4	200
521	AW UMα "B"	11 24.8	+30 31	23 06		1800 sec			
522	Comp for "B"								
523	Comp for Std Val			RH set at 12 43 → 12 44					
524	HD ~~H2999~~ wrong star	12 506 *	+26 16 ←		00 04	600 secs	#257		
525	Comp for HD112299								
526	HD 112299	12 506	+26 16					Comp II 5 26	200
528	Comp for HD112299 -	Only one		to use with HD112299					
529	Comp								
530	AW UMα "B"	11 248	+30 31	00 55	01 19				
531	Comp							FeAr	200
532	Comp							FeAr	200
533	AW UMα "B"	11 24.8	+30 31	01 31	01 41		600 ses		
534	AW UMα (Bright one)			01 43	01 53				
535	Comp			01 57					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Part. Cloudy ..... 26..

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BS	1200/36.5° G 3860	RS	5160Å	IA		during Universal	
				"	"	"	"	IA			
1000,200				"	"	"	"	IA			
				"	"	"	"		→ Fld for ?*		
				"	"	"	"				
5500,400	string	light		"	"	"	"	IA	~~stellet~~	wrong ~~star~~ Count us high as 6,100 in A	
350, 240				"	"	RS	"	IA			
600, 300 → N/A		due to tilt change		"	"	BS	"	"		Test of BS over RS	
520, 180				"	"	"	"	"		(Yes, A 2x signal with BS then with RS)	
530,170				"	"	"	"	"			
2200,200				"	"	"	"	"		Test of BS over RS	
				"		"	"	"			
360,180				"	1800/3945 G 4190	"	3900	"			
330,150				"	"	"	"	"			
7500,320		V= Z	V= Z/4	"	"	"	"	"		Great	
				"	"	"	"	"			



27

Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
536	Aw Um a	Repeat							
537	Comp	1987		02 14					
538	Nova Her	18 43.1	+15 18.5		02 34		+15 24		
539	Comp	No CB		02 38	∴ Nova Her + Fe Ar				300
540	Park	while moving	≈ 140/sec						
541	Flat Field	2 hrs		03 11		0 0	Zenith	Tung A1/8	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 28

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 1.9.37.6

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				RC	1800/39.5 G4190	BS	3900				
					"	"	"				
					1800/46 G4900	"	HR			Cloud	
					"	"	"				
A					"	BS	"				
1900, 300					1800/39.5 G4190	BS	3900	Shows probable		grating Flaw @ pixel # 3583 ie (.....)	

29

Emulsion Batches:

Date Mar. 5-6 & 8, 87 Observers T. Tn - Mki

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Field	1800sec				0 0	Zenith		
	Dark	while going reversed							
	Comp for V471 Tau							Fe A A 1/4	300
45	V 471 Tau	1200sec		19 30	19 50				
46	"	1200+1200		19 52					
47	Comp For V 471 Tau								
48	V 471 Tau	1200sec		20 21	20 41				
49	" "	1200+1200		20 42					
550	Comp for V471 Tau								
551	Sky near V471 Tau	600sec	V 471 Tau taken to far Left of Aquisitn Screen						
552	Comp for V471 Tau								300
	V471 Tau	1200sec		21 25	21 45				
	"	1200+1200 sec		21 46	22 05				
	Comp for V471 Tau								
	Comp For BM Coss			22 22					
		over							

Spectr. Temp. ..... Dome Temp./Hum. -2°C. / 80% Transparency Conditions . Sl. hazy 30

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1200/42 ??	BS	Hd	IA			
230/sec					G4480 1200/42.1	"	"				
580,260					"	"	"			Reversal	
*2600,280		9.4 - 9.7		"	"	"	"	*cuts as high as 3200/sec in "A"			
				"	"	"	"				
600,300				"	"	"	"				
										Dome T = -3°C	
										plotted	
250,250									Moon 1 hr west & vs/hazy		
600,275											
2300,300											

31 Pg #2

Emulsion Batches: .....

Date ..... Observers ...Tu..... .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Wrong Star ~~BM Cass~~	1986.3 α 00 53.9	δ +64 01	22 27	22 37	Halt at e	600sec		
	BM Cass	00 53.9	+64 01	22 41		900sec			
	Comp for BM Cass			22 56				For A 1/4	200
	Comp " @	5160R						"	"
	BM Cass	"							
	BM Cass	1200 +1200							
	Comp "								
	Comp for AW UMa "B"								
	AW UMa "B"	1200		00 11	00 31				
	"	1200	+1200	00 32					
	Comp								
	Sky N of UMa "B"		900 sec	01 02					
	Comp for AW UMa "B"								
	AW UMa "B"	1986.3 11 29.4	+30 02						
	Comp)							For A 1/4	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1800,260	Fine			BC	1200/4?1 G4480	BS	Hd	Field 065	noted on chart fld.	due North of BM Cas Reversal of curve	~15'
3900/340				|	|	|	|			Cals as high as 4500	
600,250				|	|	|	|				
~~600,300~~				BC	1200/36.5° G3860	BS	5160Å				
1600,300					|	"	"				
1600,300	still				|	"	"			plotted	
2000,330										Pizza 1228 --	
240,230											
500,260											
1600,290											

33 1913

Date ..... Observers MKi-Tk .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	~~Comp for Std Vel~~ Dark			600 secs while setting telescope					
	Comp for HD 112299								
	HD 112299	12 54.8	+25 48				600 sec		
	Comp for Std Vel								
	Comp for ~~T Z Boo~~	15 07.7	+40 02						200
	T Z Boo w/ wrong Star	15 07.7	+40 02				600 sec		
	T Z Boo	"	"				600 sec		
	Comp for T Z Boo								
	Comp for T Z Boo			- (probably no CB of last record)					
	T Z Boo	15 07.7	+40 02						
	Comp for T Z Boo								
	Comp for Nova Her								
	Nova Her 1987	18 43.1	+15 18.5				248 sec		
	Comp for Nova Her								
	Nova Her	600 secs							
	Nova Her	600 + 600							

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. L B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		~~V-8 8~~	~~F8 V~~	BC	1200/365 G3860	BS	5160Å				
		V-8 8	F8 V	"	"	"	"		std vel		
				"	"	"	"				
200				"	"	"	"				
				"	"	"	"			The Brighter Star near the "O" on Fld	
700,250											
					1800/395 G4190		3900Å				
300,200											
270,220										too weak a signal	
8					1800/46 G4900		HB				
800,230					"		"				
					"		"				

35 Pg 4

Emulsion Batches: .....

Date ..... Observers ....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	Comp for Nova Her								
	Comp for Cyg X1								
	THDE226868 Cyg X1	19 54.6	+34 56	04 26	04 36				
	Comp for Cyg X1								
	Comp " " @ Hα								
	~~Comp~~ Cyg X1	19 54.6	+34 56						
	Comp for X1								
	Comp for PU Vul								
	PU Vul 1987	20 20.6	+21 37						
	Comp								
	Comp @ Hβ for PU Vul								
	PU Vul	20 20.6	+21 32						
	Comp for PU Vul								
	Flat Field for 1200/42.1 grating								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... 36...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ~~4°C~~ 98%.

Comparison Filter Exp	Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					BC	1800/46 G4900	BS	HB				
					〃	1800/ G 4770	〃	4686A				
	1700, 230				〃	〃	〃	〃				
						〃	〃	〃				
						1800/ G 6000	〃	Hα				
	1800, 232					〃	〃	〃				
						〃	〃	〃				
						〃	〃	〃				
	2400, 280					〃	〃	〃				
						〃	〃	〃				
						1800/46 G4770	〃	HB				
						〃	〃	〃			Clouds fog	
						〃	〃	〃				
						1500/421 G4480	〃	Hα				

37 Mon - Tues 11 26

Date Mar. 9-10/87 Observers KBT-TN

Emulsion Batches:
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Plate No. FILE	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP0006605.BH3	Flat		43 00	14:59	17:11			tungsten "A"/B	1200
606	Dark			18.39					
607	Comp for BD5 1668	1668 not 1950	probably not labeled correctly						
608	BD+5 1668	07 24.7	+5 23	21 00	21:20				
609	Comp for same								
610	BD+5 1668	07 24.7	+5 23	21 35	21 55				
611	Comp for same			21 59					
612	Comp for Pol	B							
613	Polaris B				23.01				
614	Comp for Pol B			23 06					
615	Pol B			23 23		PC halted @ 98 Dsecs "A Crash"			
Etc	Comp								
17	Polaris "B"			00 38	00 58				
18	Comp for Polaris	B		01 01					
19	" "								

Spectr. Temp. ..... Dome Temp./Hum. ~~-6°C~~ /56% Transparency Conditions ... Fine ...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

very Gusty from N

Exp. Mtr. COUNTS A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
				PCS	1800/45	150μ slit	HP				
190,190				"		"					
340,340	poor			"	1800/46 G4910	"	5700				
500	poor			"	"	"	"	CH/A			
340,340				"	"	"	"				
550		V= 9.82		"	"	"	"	CHB			
				"	"	"	"			Refocused PCS OK now	
	OK now			"	1800/45 G4900	"	HP				
400, 400				"	"	"	"	CHA		LH window on TV	
				"	"	"	"				
250, 240				"	"	"	"	CHB		decker in for "B" window	
435, 420					"	"	"			Dark 2 65 sec	
460, 2000					"	"	"	CHB	repeat	T = -13°C in dome	
435, 416					"	"	"	"			
					1800, 39.8 G4230		400 A	CHB		seeing deteriorating	

39 Pg 2

Emulsion Batches:

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
20	Polaris B			01 13					
~~19~~	Comp for Polaris "B"								
~~20~~	Dark	1200secs							
21	Fe Ar after problems - seems normal, but signals started "jumping in "B"								
22	Dark	600sec - Problem again with "B" anyway. Aa problems							
23	Dark	looks OK		3 49	3 59				
24	Sky towards TO - clear sky			4 03	4 17				
25	Dark	327secs while moving to Nova Her							
26	Fe Ar for Nova Her								
627	Nova Her			04 34	04 44				
628	Nova Her			04 48					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... 40.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... / 67%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4 B											
30, 400	poor again			PCS	1800/34.8 G4230	150μ	4000Å	CHB			
"					"	"	"	"	Problem after for 30 min with		
									possible light from Polaris on PCS		
'B'					1800/46 G4910	150μ	5200				
2 - plots done.					"	"	Dark @ 04 hrs =			28/sec & stable!	
					"	"	5200				
					"	"	"				
40, 110				PCS	1800/55.5 G6000	150μ	Hα	CHB		OK	
30, 1100	poor			"	"	"	"	CHB		Accepting grain	
										" " " "	
									Dome T =	-14°C	

41 Tues - Wed

Date Mar 10-11/87 Observers MKI-Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
629	Flat Field	ND 1.2 + 2.3		~15 59	~17 59	0 0	Zenith	Tungsten A1/8	2hrs
630	Dark 30mins			18 17					
631	Comp for StdVel	(probably a throwaway)		19 04	19 08			Fe Ar A1/4	20
632	~~HD 45337~~ Repeat of Comp	after realignment		1921				"	4
633	HD 42397	06 054	+26 55	1925					
634	Comp for StdVel								
636	Comp for V471								
637	V 471 Tau	03 447	+16 57	1956	20 16				
38	Comp for 11			20 20					
39	V 471 Tau								
40	Comp							Fe Ar A1/4	200
41	V 471 Tau			2049	21 09				
42	Comp			21 10	~~21 30~~				
643	V 471 Tau								
644	Comp								
	over								

Spectr. Temp. ..... Dome Temp./Hum. -6.5°C / 60% Transparency Conditions Fine 42

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

PCS

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS BC	1200/423 G4480	BS	Hα				
70, 70										Cnts ≈ 70/sec	
370, 112										Thru readjustment of	
380, 100										of Flat mirror	
6000, 400										as high as 7400 cnts in A	
									A Dark # 635		
1200, 160										as high as 3000 cnts in A T = -9.5C to dome	
470, 110								Sky ≈ 90/sec		≈ 10/sec above dark	
300, 150										Plot done - good Hα em	
160, 110											
2000, 150											

43 ... Pg #2

Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
645	V471 Tau	03 44.7	+16 57	21 42	22 02	1200sec			
	Comp "			22 04					
	V471 Tau			22 09	22 29		+17 07	reversed	
	Comp "								
	Dur Ti	5 mins	while	resetting					
	Comp for BM Cass								
	BM Cass	1986.3 00 53.9	+64 01						
652	Comp for BM Cass								
653	" " "	@ 5160 Å							
654	BM Cass	00 53.9	+64 01	23 22		1800sec			
655	Comp. Fe-Ar.								
56	Comp for HD 112299								200
57	HD 112299	1986 12 54.8	+25 48						-
58	Comp								
59	Comp for 3C 273								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt °	Slit	Emulsion	P.H.	Program	Remarks	Quality
2000, 170	OK			PCS BC	1200/423 G 4480	BS	Hd			Sky ≈ 15-20 cts above dark	
500, 110											
										Sky = 15-20 cts above	
500, 110											
60, 110										Dark ≈ 8 d/sec	
300, 270										Dome T = -10°C	
										Name on Label	
240, 110				BC	1200/365 G 3860	BS	5160			maybe former ie i 471.	
230 , 150				"	"	"	"				
							"			(A always ~ 5 s⁻¹ higher) Dark ~ 75 s⁻¹	
							"				
6000, 180							"			Sky : 5-10 counts above dark	
						"	"				
					1200/~~36~~ G 4060						

45 Pg #3

Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
660	3C 273				01 04				
61	Comp for 3C			01 06					
62	Comp for ~~Nova~~	1900 11 24.8	+30 31						
63	AWUMa "B"	11 24.8	"	01 23	01 33				
64	Comp for B								
665	Flat Field	ND 2.3 + ND 0.6						Tung 4 1/8 FeAr 4 1/4	
667	Comp for Nova Her								
668	Nova Her	1987 18 43.2	+15 19						
69	Comp "								
70	Comp @ 4900Å								
71	Nova Her			03 44	04 04	1700 secs			
72	Comp for Nova								
73	" " " @ Hα			04 10	04 27	760 secs			
74	Nova Her @ Hα								
75	Comp								
	~~Dark~~ K								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Note PCS clock ≈ 6 secs fast tonight.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A PSC B				BC	1200/ G 4060	BS	HB red sh; Hα 800Å				
				"	"	"	"				
				"	1200/365 G 3860	"	5160Å				
3000, 170					"	"	"				
					"	"	"				
2500, 170	(perfect for this)					"	"			Dome T = -11.5°C	
250, 77					"	"	"		1st Comp accidently was Tungsten CHA got too		
900, 100					"	"	"		much light. Dark after 2nd dome		
	Plume still "Nova Her"				"	"	"		" " "	#666	
1000, 110				BC	1200/357 G 3750	"	4900				
1000, 110				"	"	"	"				
				"	"	"	"				
480, 130				"	1200/423 G 4480	"	Hα				
2800, 200				"	"	"	"		"FeHr" on Label		
				"	"	"	"				

47 P94

Emulsion Batches: .....

Date .Mar.10-11-87.... Observers ..MK-T.G..... .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
76	Dark	while	closing						
77	Flat Fld	2hrs		0459				Tung A1/8	
	MAR 11/87	2:							
78	TUNGSTEN			19:34	19:04				1500sec
79	TUNGSTEN			19:18	20:18				7200sec
80	DARK			21.23	23:23				7200sec

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -10.5°C / H-75%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS BC	1200/4273 G4480	BS	Hd			~ 60 sec	
2109,200				"	"	"	"			ND 2.3+0.9	
					1200/ G4480	BS					
2303,240					1200/ G4480	B-S					
140,140											

49

Date THURS. FRI MAR 12-B/13 Observers MKI-R.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
81	TUNGSTEN			17:20	19:20			TUNG A⅛	720 SEC
82	DARK			19:51	20:01				
83	COMP			20:33	20:36			Fe A A¼	240 SEC
84	V471 TAU	03 44.7	+16°57	20:38	20:59				1200
85	COMP			21:01	21:04			Fe A A½	240
86	V471 TAU	03 44.7	+16° 57'	21:05	21:25			Fe A A¼	1200
87	COMP			21:27	21:30			Fe A A¼	240
88	V471 TAU	03.44.7	+16° 57.1	21:32	21:52				1200
89	COMP			21:54	21:58			Fe A A½	240
90	SKY			22:00	22:05				300
91	V471 TAU			22:06	22:26				1200
92	COMP			22:27	22:31			Fe A A¼	240
93	COMP			23:06	23:10			Fe A A½	240
94	BM CAS			23:11	23:31				1200
95	COMP			23:32	23:36			Fe A A¼	240
96+97	SKY			23:37	23:42				

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				P.C.S.	1200/42.2 4480	B.S.	Hα			ν 2.3+0.9	
										TELE REVERSED	
600				P.C.S	1200/42.3 4480	B.S	Hα				
2000/270		9.4	KO	P.C.S	"	"	"				
600				P.C.S.	1200/42.3 4480	B.S	Hα				
2400/280				P.C.S.	1200/42.3 4480	B.S	Hα				
600				P.C.S.	1200/42.3 4480	B.S.	Hα				
1500				P.C.S	1200/42.3 4480	B.S	Hα				
600				P.C.S.	1200/42.3 4480	B.S	Hα			30c/s TO SKY	
233				P.C.S	1200/42.3 4480	B.S	Hα				
1500/280				P.C.S.	1200/42.3 4480	B.S	Hα				
600				P.C.S.	1200/42.3 4480	B.S	Hα			Dark ~ 140 c/s	
600				P.C.S.	1200/42.3 4480	B.S	Hα				
3500/300				P.C.S.	1200/42.3 4480	B.S.	Hα				
600/300				P.C.S.	1200/42.3 4480	B.S	Hα				
210/180				T.C.S	1200/42.3 4480	B.S	Hα			200c/s SKY	

Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp	Exp. Mtr.
698	COMP			23:44	23:47			Fe A A ¼	200	600
699	BM CAS			23:48	00:18				1800	1800
700	COMP			00:20	00:24			Fe A A ¼	200	600/1
701	BM CAS			00:25	00:55				1800	1300/200
702	COMP			00:57	01:00			Fe A A ¼	200	
703	COMP			01:09	01:13			Fe A A ¼	200	400/300 400/400
704	HD 112299	12 50.6	+26° 16	01:14	01:19				300	
705	COMP			01:19	01:33			Fe A A ¼	200	600/200
706	COMP			01:25	01:28			Fe A A ¼	200	
707	HD 112299	12 50.6	+26° 16	01:30	01:35				1300	600/575
708	COMP			01:36	01:40			Fe A A ¼	200	
709	COMP			01:46	01:50			Fe A A ¼	200	
710	AW UMA "B"			01:50	02:10			Fe A A ½	1200	600/240
711	COMP			01:11	02:15			Fe A A ¼	200	
712	TUNGSTEN			02:19	03:04			TUNG A 3	2700	2800/280

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600				P.C.S.	1200/36.5/3860	B.S	5160				
1800		√852 9.33		P.C.S.	1200/36.5/3860	B.S	5160				
600/190				P.C.S.	1200/36.5/3860	B.S	5160				
1300/200				P.C.S	1200/36.5/3860	B.S	5160				
				P.C.S	1200/36.5/3860	B.S	5160				
600/200				P.C.S.	1200/36.5/3860	B.S.	5160				
4000/400				P.C.S	1200/36.5/3860	B.S.	5160				
600/200				P.C.S	1200/36.5/3860	B.S	5160				
				P.C.S.	1200/42.3/4480	B.S.	Hα				
457/375				P.C.S	1200/47.3/4480	B.S	Hα				
				P.C.S.	1200/42.3/4480	B.S.	Hα				
				P.C.S.	1200/36.5/3860	B.S.	5160			GRAND SE NOT Park ~180 c/s	
900/240				P.C.S.	1200/36.5/3860	B.S.	5160			PROPLY SET	
				P.C.S.	1200/36.5/3860	B.S	5160				
2800/280				P.C.S.	1200/36.5/3860	B S	5160			UD 2.3+.6	

#3

53

Date THUR FRI MAR 12-13 Observers MH-R

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP0000 713	COMP			03:18	03:22			Fe A A 1/8	200
714	NOVA HER 1987	1987 18 43.1	+15 18	03:22	03:42				1200
715	COMP			03:45	03:48			Fe A A 1/8	200
716	SKY			03:49	03.54				300
717	COMP			03:56	04:00			Fe A A 1/4	200
718	NOVA HER 1987	1987 18 43.1	+15 18	04:00	04:21				1200
719	COMP			04:22	04:26			Fe A A 1/4	200
720	COMP			04:32	04:35			Fe A A 1/4	200
721	PU VUL			04:36	05:07				1200
722	COMP			05:08	05:11			Fe A A 1/4	200
423	COMP			05:12	05:16			Fe A A 1/8	200
424	PU VUL			05:16	05:36				1200
425	COMP			05:38	05:42			Fe A A 1/8	200
426	SKY	18 43.1	+15° 18'	05:44	05:49				300
427	DARK			05:50	6:00				600
428	TUNGSTEN			06:04				TUNG A 1/8	7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... 54 .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
375/175				P.C.S	1200/35.7 3760	B.2	4900			SLIT SC NOT PROPERLY SET	
600/177				P.C.S	1200/35.7 3750	B.S.	4900				
350/200				P.C.S.	1200/35.7 3750	B.S.	4900				
185/159				P.C.S.	1200/35.7 3750	B.S.	4900				
500/234				P.C.S.	1200/40.3 4480	B.S.	Hα				
1000/230				P.C.S.	1200/42.3 4480	B.S.	Hα				
500/213				P.C.S.	1200/42.3 4480	B.S.	Hα			10C/SEC SKY TO 15C/SEC	
500/200				P.C.S.	1200/42.3 4480	BS.	Hα			Dark ~160 s⁻¹	
500/300				P.C.S.	1200/42.3 4480	B.S.	Hα			SOME CLOUDS 2 HALTS	
500/200				P.C.S.	1200/42.3 4480	B.S.	Hα				
375/180				P.C.S.	1200/35.7 3750	B.S.	4900				
1800/240				P.C.S	1200/35.7 3750	BS.	4900				
350/175				P.C.S.	1200/35.7 3750	B.S.	4900				
				P.C.S.	1200/35.7 3750	BS.	4900		BEGIN	40C/S SKY	
									END	120C/S	
										DARK 150/SEC	
				P.C.S	1200/42.3 4480	B.S	Hα				

55

Emulsion Batches: .....

Date MAR 14/87 SAT Observers ..... R. .....

.....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49897F2	FOCUS 9FST		COMP/STELLAR					FeNe	60
								CLEAR	30?
49897F2	FOCUS 9EST		"	"				FeNe	65
								CLEAR	25

Spectr. T
Focus ...
Spectr. T
Eq Mp
1345
1357
1406
1512

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Min	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3 PhPk											
1345				B.C.	1200/5077 5440	B.S	IIaO-E	4		T = 33°F F · 394	Flat cont. S/R ovg
2157											
1406				B.C.	1200/50.7 5440	B.S.	IIaO-E	5		slope { more Red in Blue →	data S/R ovg
1584											
									#	PUT MORE PRESSURE ON PLUNGERS FOR P.H.	

57

Emulsion Batches: MAR17 Ri 7MIN@67°C IIaO-E 3415-0127

Date SAT. MON. MAR 15-16/87 Observers R. (TOM PHOMED IN)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49898 ✓	HD 655B3	07 54.3	+29°31	19:12	21:08	00"24W	+29° 24	Fe Ne CLEAR	30-630 30-655 30-670
49898F	FOCUS TEST							Fe Ne CLEAR	65 25
49899 ✓	HD 89449	10 14.3	+19° 59	21:50	22:11	00"54E	+19°42	Fe Ne CLEAR	30-605 30-646 30-695
49899T	SPIT CAL FOR PLATES 49898 -49902.			15MIN@15VOLTS		① D4 3900	② D3 4300	③ D 4810	
49900	HD 93521	10 42.7	+38°06'	22:18	23:18	00" 15E	+37°48	Fe Ne CLEAR	30-605 30-612 30-629
49901	HD 103095	11 47.2	+38 26	23:29	01:02	00"25W	+37°58	Fe Ne CLEAR	30-670 30-627 30-685
49902	HD 122742	13 58.6	+11°16	01:12	02.38	00"09E	+11°00	Fe Ne CLEAR	30-655 30-654 30-634
49902F	FOCUS TEST							Fe Ne CLEAR	60 25

Spectr. Temp. ..36°F..... Dome Temp./Hum. ..0°C....48% Transparency Conditions ....V. Good.....58...

Focus .....394.....

Spectr. Temp. ..... Dome Temp./Hum. ..-04°C..65%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4148		V=									
3852		7.0	dG7	B.C.	1200/50.7 5440	B.S.	IIaO-E	4	STD VEL	SET FOR G12 T= 36°F F= 394	Comp sl wk Vsl wk
1444										SET FOR G12	
1521					"	"	"	"		T= 36°F F=394	Comp sl wk
4500		V=			830/40.2						Comp OK
4503		4.79	F6IV	B.C.	4260	B.S.	IIaO-E	4	STD VEL	T= 36°F F=394	Fine
							IIaO-E				v L
2336					830/40.2						Comp OK
4462		6.76	09.5V	B.C.	4260	B.S.	IIaO-E	4	Bln 0°		Fine
4007					830/40.2						Comp OK
3993		7.20	G8II	B.C.	4260	B.S.	IIaO-E	4	Asm-Sp2/KK		Fine
4000					830/40.2						Comp OK
3333		6.8	G8V	B.C.	4260	B.S.	IIaO-E	4	Asm-Sp/kk	T= 32°F F: 396	Fine
1318					830/40.2						
1535					4260	B.S	IIaO-E	4		T= 31°F F: 396	OK

59

Emulsion Batches:

Date MON. TUES. MAR. 16-17 Observers Bt-Ri

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	CASSIFICATION SPECT			19:17	04:04				
49903 ✓	HD 144579	16 01.5	+39°24	04:17	05:46	1h02W	+39°20	Fe Ne CLEAR	30-665 30-665 30-582

Spectr. T
Focus...
Spectr. T
Exp. Mtr.

Spectr. Temp. ..... Dome Temp./Hum. ..−0.1°C..... 53% Transparency Conditions ..Good..... 60

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..−0.4°C..... 59%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4000		V=	G8	B.C.	330/40.2	B.S.	IIaO-E	4	STD. VEL	T = 32°F F = 396	Comp s/str
4000		6.66			4260						S1 str

61

Date ~~THU~~ WED MAR 17-18 Observers BK-RI / RI (MK I @ MAIN BUILDING)

Emulsion Batches:
~~IIa-D~~ IIa-E 315-01277
~~IIIa-J~~ IIIa-J -03157

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49904 ✓	HD 66141 Tn ~~HD~~ 65934*	7 57.4 7 56.1*	~~+02 36~~ ~~+20 55~~	19:05	19:41	00h58E	+02°32	Fe Ne CLEAR	30-614 30-626 30-634
49905	HD 62437	7 38.9	+02 39	19:48	20:30	00h 11W		Fe Ne CLEAR	30 627 60-1230
49906	HD 62437	7 38.9	+02 39	20:35	21:17	00h 55W	+02°35	Fe Ne CLEAR	45-928 45-934
49907	HD 62437	7 38.9	+02 39	21:20	22:01	01h 40W		Fe Ne CLEAR	45-945 45-981
49908	HD 62437	7. 38.9	+02 39	22:05	22:46	02h 25W		Fe Ne CLEAR	45-1012
49909	HD 62437	7 38.9	+02 39'	22:50	23:31	03h 10W		Fe Ne CLEAR	45-102 45-1054
49910	HD 62437	7 38.9	+02 39'	23:34	00:10	03h 50W		Fe Ne CLEAR	45-1064 45-106
49.10T	SPOT CAL FOR PLATES 49903-49910				15 MIN @ 15 VOLTS	① D4 3900	② D3 4300	③ D2 4810	
49911 ✓	HD 86360	9 52.9	+12°55	00:26	02:32	03h 56W	+12°39	Fe Ne CLEAR	70-1513 70-1674 70-1772
49.12 ✓	SPOT CAL FOR PLATES 49911-12				15 MIN @	① 17.5V D4 3900	② 15V 4300	③ 5V 4810	
49.2	HD 139892	15 35.6	+36° 58	02:43	03:36	00h 40E	+36°50	Fe Ne CLEAR	69-1512 69-1529 69-1552
	* Corrected HD #, RA 1900 very sure due to velocity measure.						T_4		

Spectr. Temp. 38°F ..... Dome Temp./Hum. +01°C ....49% Transparency Conditions ..... 62 .....

Focus ....39.4.....

Spectr. Temp. ..... Dome Temp./Hum. -01°C 55%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2201 2020		4.39	K2III	B.C.	830/40.2 4260	B.S.	IIaO-E	4	STD. VEL	PN#903	
2381		6.34	F0	B.C.	830/40.2 4260	B.S.	IIaO-E	4	WATERLOO		s/u t
2490		6.34	F0	B.C.	830/40.2 4260	B.S.	IIaO-E	4	WATERLOO		s/u k
2445	Poor	6.34	F0	B.C.	830/40.2 4260	B.S.	IIaO-E	4	WATERLOO		λ
2918		6.34	F0	B.C.	830/40.2 4260	B.S.	IIaO-E	4	WATERLOO		"
2402		6.34	F0	B.C.	830/40.2 4260	B.S	IIaO-E	4	"		"
1458		6.34	F0	B.C.	830/40.2 4260	B.S	IIaO-E	4	"		vK
							IIaO-E				✓
16488 13260		5.22	B9II	B.C.	1200/50.7 5440	B.S.	IIIaF	4	dy	φ = 36°F F = 391	
							IIIaF			*	✓ ✓
15208 15025		5.0	B7V	B.C.	1200/50.7 5440	B.S.	IIaF	4	dy	φ = 34°F F = 391	

63 Mar 18-19/87 Dev Mar 22 @ 687

Date Wed-Thurs Observers T.n

Emulsion Batches: IIaO-E 325 -03177

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49913	HD 62437	07 38.9	+02 39	19 21	19 55	0022E	+2 36	FeNe Clear	45 985 45 970
49914	"	"	"	19 59	20 30	0013W	"	"	"
49915	HD 57682	07 17.2	-08 48	20 41	21 40	0147W	-8 57	"	"
49916	HD 62437	07 38.9	+02 39	21 56	22 33	0216W	+2 36	"	"
49916T	Spot Calib for 49913	-16		15 min @ 15V	D4 3900	D3 4300	D2 4810		
49916F	Focus test			23 30		0 0	-5°	FeNe Clear	120 >50

Spectr. Temp. ...41°F..... Dome Temp./Hum. 39°F/39% Transparency Conditions ...Fine..... 64

Focus .....Set 393.....

Spectr. Temp. ..40°F..... Dome Temp./Hum. 39°F/60%

Exp. Mtr. B - Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4500	OK	6·34	FO	BC	830/402 4260	BS	IIaO-E	4	Wat pgm	Special Request Pack	* Fine
4602	"	"	"	"	"	"	"	4	"		"
9011	5050	6·22	09IV	"	"	"	"	4	B½ O*		"
2038	SL poor	6·34	FO	"	"	"	"	4	Wat pgm		"
							"				VL red sl. red
				BC	830/402 4260	BS	"	4	T=40°F Still set@ 373		OK
							Closed due to RA set problems.				
							* Dust? on BS; image off center on plate, ip more than usual (maybe)				

65

Thurs-Fri

IIIaJ developed with Mar 17-18 IIIaJs

IIaO: Dev Mar 22 with previous 8 nights

Emulsion Batches:
IIaO-E 3I5 -03177
IIIaJ-Eg -03157

Date Mar 19-20/87 Observers Jn./Lg.-Jn.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49917	HD62437	07 38.9	+02 39	19 04	19 41	00 30E	+2 34	FeNe Clear	45-45
49918	"	"	"	19 48	20 24	00 13W	"	"	"
49919	HD 66141	07 57.1	+02 36	20 30	20 44	00 13W	+2 31	"	"
49920	HD62437	07 38.9	+02 39	20 49	21 25	01 13W	+2 34	"	"
49921	HD93521	10 42.7	+38 06	21 33	22 27	00 50E	+37 47	"	30-30-30
49922	HD 86360	09 52.9	+12 55	22 44	00 07	01 43W	+12 41	"	70-1519 70-1530 70
49921T	Spot Calib for 49917 -21				15 min @ 15V	D4 3900	D3 4300	D3 4210	
49922T	Spot Calib for 49922 -27				15 min @ D4	17.5V 3900	15V 4300	15V 4810	
49923	HD139892	15 35.6	+36° 58	00 21	01 45	02 22E	+36 50	FeNe Clear	70 70 70-150
49924	"	"	"	01 53	03 04	01 03E	"	"	70- 70
49925	"	"	"	03 11	04 03	00 04E	"	"	70 70
49926	"	"	"	04 07	04 54	00 47W	"	"	70 70
49927	"	"	"	05 02	05 49	01 42W	"	"	70 70
49927F	Focus test	"	"	05 54		01 42W	"	"	100-4

Spectr. Temp. ...43°f..... Dome Temp./Hum. +40../46% Transparency Conditions Fine.....66...

Focus ...393.;..391. for G8

Spectr. Temp. ..... Dome Temp./Hum. +30°../60%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4121	poor	6.34	F0	BC	830/402 4260	BS	IIaO-E	4	Wat prog		* Fine
4500	"	"	"	"	"	"	"	4	"		"
4750	"	4.39	K2III	"	"	"	"	4	std vel	Note, HD62437 would be	"
4043	"	6.34	F0	"	"	"	"	4	Wat prog	much brighter than	"
5100 5110	5050	6.76	095V	"	"	"	"	4	Blu-3*	6.34. All things being equal, compare	OKe S/Sth
20,021 20844	50-50 OK	5.22	B9IV	"	1200/50.7 5440	"	IIIaJ-eG	4	Ly prog	Exposures with std vel exp.	
							IIaO-E			OR std Vel exposures shorter than	
							IIIaJ-eG			indicated.	
20 60 20 520	OK	5.0	B7V	BC	1200/50.7 5440	BS	IIIaJ-eG	4	Ly prog	Must be tested "22" T=39.5°f Set 391	
20050 20001	"	"	"	"	"	"	"	"		"	
20070 15040	"	"	"	"	"	"	"	4	"	"	
11040 20000	"	"	"	"	"	"	"	"	"	"	
20000 20200	"	"	"	"	"	"	"	"	"	"	
				"	"	"	07B-	4		T=36.5°f Set 391 V.	S1 blue
								* Note previous page			

67 Sun-Mon

Date Mar 22-23/87 Observers Ly-Tm

8h 68°
6h 69°

Emulsion Batches:
IIaO-E 315 - 03177
IIIaJ-cfg - 03157

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
49928F	Focus test			1903		00 10W	≈45°	FeNe clear	
49928	HD65041	07 51.7	+43 47	19 10	20 13	00 03E	+43 38	"	30 30 30
49929	HD72359	08 27.2	+10 24	20 20	21 21	00 31W	+10 11	"	3 3 30
49930	HD65041	07 51.7	+43 47	21 29	22 37	02 22W	+43 38	"	30 30 30
49931	HD139892	15 35.6	+36 58	22 45	00 17	03 40E		"	70 70
49930T	Spot Calib for 49928-30,32				15 min @ 15V	D4 3900	D3 4300	D2 480	
49931T	Spot Calib for 49931,33,34,35				15 min @ D4	17.5V 3900	15V 4300	15V 4810	
49932	HD128220	14 30.6	+19 39	00 34	03 34	00 47W	+19 21	FeNe clear	3 50 20
49933	HD139892	15 35.6	+36 58	03 41	04 18	00 22W	+36 46	"	70 70 —
49934	HD170200	18 23.1	+06 01	04 27	05 25	01 17E	+6 16	"	70 70 70
49935	HD139892	15 35.6	+36 58	05 31	05 59	02 04W	+36 46	"	70 70 70

Spectr. Temp. 52°F Dome Temp./Hum. +48?/53% Transparency Conditions ... Fine ... photometric 68

Focus ... 388-391

Spectr. Temp. 40°F Dome Temp./Hum. +39?/83%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt °	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1200/507 5440	BS	098-02E	4			OK
4270 4690	OK	6.87	B2 I	"	"	"	IIaO-E	4	SB-Ly		Comp d wk V sl wk
4260 4497	50 50	6.2	A0 V	"	"	"	"	"	"	T=49.5°F	comp sl wk Fine
4210 4664	OK	6.87	B2 V	"	"	"	"	"	"		"
20500 20200	20 50	5.1	B7 V	"	"	"	IIIaJ-Ety	4	"	wavy → Fine	
							IIaO-E				✓
							IIIaJ-Ety				✓ comp sl wk
2545 3710	OK	8.5	sd0a gG0	BC	1200/507 5440	BS	IIaO-E	4	SB-Ly		wk
20,200 19,200	V Fine	5.1	B7 V	"	"	"	IIIaJ-Ety	"	"	T=43° Set 391	fine
5495 3500	OK	5.7	B8 III	"	"	"	"	"	"		fine
5048 5000	"	5.1	B7 V	"	"	"	"	"	"		fine
					KK						
						Now	"	III	4-5 in Orion, obs 11/1 IIaO		

69 Mon-Tues

Date Mar 23-24/87 Observers Bt-Tn

Emulsion Batches: IIaO-E 315 23087

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
49935F	Focus test			19 04		0 0	+5 25	FeNe clear	140 50
49936	HD47105	06 31.9	+16 29	19 30	19 31	0141 W		n	50 50
49937	n	n	n	19 36	19 37	0047W		n	n
49938 ✓	HD66141	07 57.1	+2 36	19 45	20 03	0013E	+	n	n
	Classification	Spectrograph		20 20 → 02^					
49939	HD103095	11 47.2	+38 26	02 07	03 16	03 12W	+37 55	FeNe clear	35 35 35
49940	HD140538	15 39.1	+2 50	03 21	0407	00 12W	+2 38	n	35 35
49941	HD158633	17 25.3	+67 24	04 17	05 22	0016E		n	35 35
49941T	Spot Calib	for 49936–43		15 min @ 15V		D4 3900	D3 4300	D2 4810	
49942	HD137909	15 23.7	+29 27	05 28	05 32	0152W		FeNe clear	50 50
49943	n	n	n	05 36	05 39	0159W		n	50 50

Spectr. Temp. 52°f ..... Dome Temp./Hum. +48°f/48% Transparency Conditions ..Fine..... 70

Focus ...389.....

Spectr. Temp. 43°f ..... Dome Temp./Hum. +40°f/70%

Comparison Filter	Exp.	Exp. Mtr. B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						BC	1200/507 5440	BS	IIaO* E	4		*last of past batch	coat'g SlRol
		9036	"	1.9	A0 IV	"	"	"	IIaO-E	4	Asm Sp KK		fine
		9,500		"	"	"	"	"	"	4	"		fine
		6,700	ok	4.39	K2 III	"	"	"	"	4	stdvel		fine
		Separate Records Kept for Rg											
		4000	var wt				1200/507						
		4000	OK	7.2	G8 V	BC	5440	BS	IIaO-E	4	Asm Sp KK	Set 390 T-47°	vslwk
		4045											
		4040	OK	6.6	dG5	"	"	"	"	4	"		vslwk
		4005											
		4000	Vgood	7.1	dK1	"	"	"	"	4	"		"
									"				vv
		7700	Fine	3.93	Top	EC	1200/507 5440	BS	"	4	Asm Sp KK		fine
		7400	"	"	"	"	"	"	"	4	"		"

91

Emulsion Batches: IIa0E 315 — 23037

Date Mar. 24-25/87 Observers Rm-Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49944F	Focus Test			19 11		00 38W	+7 11	FeNe clear	200 100
49944	HD 44990	06 19.8	+07 08	19 17	22:31	03 57W	"	"	35 35 35
49944T	Spot Calc	for 49944-46			15 min	15V D4 3400	D3 4300	D2 4810	35 35 3
49945	HD65041	07 51.7	+43 47	22 41	00:55	04 48W	+43 38	FeNe clear	35 35 35
49946	HD 107328	12 15.3	+3 53	01 02	02:27	0200W	+3 28	"	35 35
Tn	Apr 6/87	Focus & illumination test of Ti-Ne tube				Dome Temp=		44 °F	H: 91%
49946T1	Ti-Ne test			21 33		0 0		Ti-Ne clear	5 min + 5 min
	5 min test of Ti-Ne with diffuser slide "up"				gives	1234	cnts	Ti-Ne clear	5 min
49946F1	Focus test							FeNe clear	150 sec 50 sec
F2	"						"	"	150 sec 150 sec
F3	"						"	"	150 50
F4	"						"	"	"

Spectr. Temp. 53°F..... Dome Temp./Hum. +50°F/55% Transparency Conditions Fine...clear...sunny.....

Focus..3.88.....

Spectr. Temp. 48°F..... Dome Temp./Hum. +40°F/80% East wind increasing

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1200/507 5440	BS	IIIa F-E	4	fog test?	not sure if comp will show thang	center vs/Rad at B&C end
+169 3658 ~~4016~~	5050-7 OK	≈7.5	≈G	"	"	"	IIaO-E	4	Cyg-Rem	severe RA oscillation @ 3hr W seeing going fast	vs/wk
							IIaO-E				vw
4016 3185	OK+ par	6.87	B2V	BC	1200/507 5440	BS	IIaO-E	4	SB-Ly Ly prog	severe RA oscillation @ hr W	s/wk
1267 2545	V bad	4.96	K1III	"	"	"	"	"	STD VEL	Cirrus	s/wk
Blue filter 314 264	↓	not (5 min with FeNe (slide down)	+ diffuser in	BC	1200/50.7	BS	IIaO-E	4	T=49°F Set 388	gives 440 cnts as a separate test) cnts (10 min total) Somewhat slow	
1234 ~~1100~~ 2900											
2800	diffuser out			BC	1200/507	BS	IIaO	5	T=49.5°F Set 328		
2900		"		"	"	"	"	4	"		
2633		"		"	"	"	"	5	"		
2900		"		"	"	"	"				
2763		"		"	"	"	"	4	"		
2910		"		"	"	"	"				
2420		"		"	"	"	"				
KH Note	only 3/3 IIaOs in ut comp.									(Not even touched on log) "Fresh" bar from fog of last week was easily bleached on 4x5?	

73

Date Tues/Wed Apr 7/8 1987 Observers Rm Tn Ly

Emulsion Batches:
IIaO-E 315 - 04067
5m 67½° IIIaJ-E fg - 24037

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49947	HD 29260 = S2 Tau	04h 31.4	+18° 20	19h 30m	20h 23	4h 33 W	+18° 40	Fe Ne Clear	35-35 35
49947T	Spot Calib for 49947-49			15 min @ 15V	D4 3900	D3 4300	D2 4810		
49948	HD 44990 = T Mon	06h 19.8	+7° 08	20h 30	21:52	4h H W	+7 16	Fe Ne Clear	35-35 35
49949	HD 72359	08h 27.2	+10° 24	22h 01	23:33	3h 48 W	+10° 15	Fe Ne Clear	35-35 35
49950	HD 86360	9h 52.9	+12° 55'	23h 38	01:33	4 21 W	+12 41	Fe Ne Clear	70 70
49951	HD 139892	15 35.6	+36 58	01 41	03 08	0 15W	+36 50	n	70 70 70
49951T	Spot Calib for 49950-53			15 min D4	17.5V 3900	15V 4300	15V 4810		
49952	HD 159561	17 30.3	+12 38	03 14	03 31	01 16 E	+12 45	Fe Ne Clear	100 100
49953	HD 161096	17 38.5	+04 37	03 40	04 50	00 04 E		n	70
49953F	Focus test					"	"	n	110 50

Spectr. Temp. 52°F ..... Dome Temp./Hum. 45°F / 68% Transparency Conditions Fine 74

Focus ... 391 .....

Spectr. Temp. 41.5°F ..... Dome Temp./Hum. 35°F / 88% gusty NW winds

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7 50cuts +648	2-3	7.1-7.7	F6Ib-F6Ib	BC	830/40.2	BS	IIaO E	4	Cep/Rm		Comp s/str v s/wk
							IIaO-E				v v
1871 2780	ok→ poor	6.5-8.0	F7-K1	BC	830/402	BS	IIaO E	4	Cph/Rm	severe Atmosphere 3°20W	Comp s/str fine
4372 4040	poor	6.2	A6II	BC	1200/50.7	BS	IIaO E	4	SB/Ly	" " " 3°17W	fine
13815 9032	poor	5.2	B9II	"	1200/50.7	BS	IIaO E	4	BL/SB	" " " 3°24W	~~fine~~
20767 19133	"	5.00	B7V	"	"	"	"	4	SB/Ly	set 391 T: 43°F [illegible]	Fine
							"				v
3415	Vpoor	9.2	A5III	BC	1200/50.7	BS	"	4	Asm Sp-tk		Fine
13000 6500	"	3.9	K2III	"	"	"	IIaJ Eeg Apr 7	4	Std/RI		OK
					"	"	IIaO E	4		set 391 T 41.5°F	sl. red in B but OK

Note - Apr 8/9 - Develop IIaOs from this night & next together, as 1 strip may be in wrong box

KK Note. Only 4 IIaOs left in Dome

75 Cub Tour Mars & Moon seen

Date Wed./Thurs. April 8/9 1987 Observers Ly – Tn

Emulsion Batches: II a0-E 315 Apr 7
51½ ~ 68 III a-J Feb 24037

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49954	HD72359	08 27.2	+10 24	19:58	20 47	1 05 W	+10 17	Fe Ne Clear	35 35 35
49955	HD86360	09 52.9	+12 55	20 54	22 26	1 19 W	+12 41	11	70 70 70
49955T	Spot Calc for 49955, 57, 59			15 min @ D4		17.5V 3900	15V 4300	15V 4810	
49956	HD128220	14 34.2	+19 18	22 36	02 43	0 59W	+19 26	Fe Ne Clear	35 35 35
49956T	Spot Calc for 49954, 49956, 58					D4 D3 D2 15min @ 15V 3900 4300 4810			
49957	HD137892	15 35.6	+26 52	02 41	03 43	0 55W	+36 50	Fe Ne Clear	70 70 70
49958	HD157482	17 18.5	+40 04	03 50	04 43	0 14W	+40 09	Fe Ne Clear	35 35 35
49959	HD177724	19 00.7	+13 43	04 48	05 01	1 13E	+14 00	11	120 120

Spectr. Temp. 47°F ..... Dome Temp./Hum. 45°F / 77% Transparency Conditions OK - Some cloud 76

Focus 3.89 - 3.90

Spectr. Temp. ..... Dome Temp./Hum. 38F / 80%

Fm0000002.tiwi
Moon Frame saved on grabber after Tour

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4505	30-50	6.2	40V	BC	1200/507 5440	BS	IIaO e	4	SB-Ly		Comp OK
4208											OK
0365 5780	OK	5.22	B9II	"	"	"	IIIaJ e,y	4	SB-Bln	near Moon	fine
				"	"	"	IIIaJ e,y				V
5035 5006	OK	8.5	B5V esd	"	"	"	IIaO e	4	SB-Ly	Frame Saved in tiwi3.tiwi	Comp OK wk
							IIaO e				vvL
0016	OK	5.0	B7V	BC	1200/507 5440	BS	IIIaJ e,y	4	SB-Ly	very loaded Set 390	fine
6000 6020	poor 50-50	6.2	dF8 G	"	"	"	IIaO e	4	SB-Bln		vs/wk
35476	OK	3.0	A0V	"	"	"	IIIaJ e,y	4	SB-Bln		fine
					KK-	More IIIaJ		needed in Frame			

97 Thurs Fri Dev 7'@68° Apr12 IIa0-e 5½' @ 68° Emulsion Batches:

Date Apr. 9-10/87 Observers KK-Tm IIIaJ-cfg Apr 9

IIa0-e Apr 7

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49960	HD 29316	04 32.0	+53 17	19 37	20 48	05 02 W	+53 37	FeNe Clear	120 120 120
49960T	Spot Calib	for 49960,62			15min@ D4	17.5V 3900	15V 4300	15V 4810	
49961	HD 66 7751	07 59.9	+70 00	21 05	22 08	02 53 W*	+69 37	FeNe Clear	35 35 35
49961T	Spot Calib	for 49961,63			15min@ 15V	D4 3900	D3 4300	D2 4810	
49962	HD 99028	11 18.7	+11 05	22 20	22 48	00 20 W	+10 47	FeNe Clear	100 100 100
	Drive Test	"	"	23			"		
49963	HD 107328	12 15.3	+3 53	23 10	23 35	00 09 W	+3 33	FeNe Clear	50 50
49963F	Focus test					"	"	"	100 250

Spectr. Temp. 53°F ..... Dome Temp./Hum 55°F / 53% Transparency Conditions Fine .....

Focus ... 387.5 .....

Spectr. Temp. ..51°C ..... Dome Temp./Hum ..... / 70%

Exp. Mtr. (blue filter)	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
19663											
21070	Fine	≈5.5	A5n	BC	1200/50.7 5440	BS	IIIaJ-ef3	4	Asm Sp kk		Fine
							IIaJ-ef3				✓
5022										*	
5050	OK	≈7.0	d/F8	BC	1200/50.7 5440	BS	IIaO-e	4	Asm Sp kk	Reversal	Fine
							IIaO-e				✓
20136											**
20912	OK	4.34	F2IV	BC	1200/50.7 5440	BS	IIIaJ-ef3	4	Asm Sp kk		Fine
between "B" & "C" for interac					t. with worm gear				200 lines		
6027	V good	6.08	K1III	BC	1200/50.7	BS	IIaO-e	4	std vel		st wk Fine
				〃	〃	〃	〃	4			OK
								2 1/2	IIaO comp s/wk		
									** Unfortunately, this IIIaJ got developed		
									with the IIaOs		

Companion Filter Exp.

79 Mon-Tues

Date . Apr. 13-14/87 . . . Observers . . CH-TA . . . . . .

Emulsion Batches:
5½" 68 . . . IIIa-J cfg . 1A7 . . . . . Apr 9
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. . . . . .

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49964	HD159561	17 30.3	+12 38	02:10	02 21	2 04 E	+12 42	FeNe Clear	≈140 140
49964T	Spot Cal's for 49964-65				15 min e04	↑7.5V 3900	15V 4300	15V 4810	
	DRIVE TEST Done on previous star e copied to disk						+12 42		
49965	HD182640	19 20.5	+2 55	03 13	04 09	1 07 E	+03 14	FeNe Clear	120 120
	Apr 16 ≈ 20h EST Focus Tests with altered PH #5 against unchanged PH #4								
49965F1	Focus test					0 0	+15°	FeNe Clear	120 50
F2	" "					"	"	"	120 60
F3	"					"	"	"	90 40
F4	"					"	"	"	"
T1	Full aperture focus test ie (to test effect of Jacker on comp shift)					"	"	"	60 25
T2	"	"				"	"	"	"
	Note Jacker moved from "Comp" to "Stellar" in normal way, ie No Progeratins								

Spectr. Temp. 54°f ..... Dome Temp./Hum. ~~45°f~~ / 90% Transparency Conditions ... Cloudy ... Semi 80

Focus ... 387.5 .....

Spectr. Temp. 50°f ..... Dome Temp./Hum. ~~44°f~~ / 90%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
35893	OK	2.2	AS III	BC	1200/507 5440	BS	III a-s-eey	4	Asm Sp kk		Comp set w/ fine
							III a-s-eey				
(DT000003.Tn ; B filter			AN# saved)		partly cloudy				Worm gear p.	between "E" & "F"	
33000	OK	3.68	FO II	BC	1200/507 5440	BS	III a-s-eey	4	Asm Sp kk	same cloud	Comp set w/ sl wk
Blue filter		Note	BS	reset into place	making sure that Rotation ~~set~~ set to					set limit (Later comparison data	
3523				BC	1200/507	BS	II a-O-e	4	Spot temp = 54.5°f. set 389	("sl adjusted	Focus sl wk
3240					5440						
3600				"	"	"	"	5		Slope (Blue mo. #1	
3269											
1945				"	830/140.2 4290	"	"	5	Focus set 391 i=54.5f	Center Kel — slope	
2722											
1900				"	"	"	"	4		Center kel but flat	
2700											
1816				"	"	"	"	5		Blurry! Fuzzy!	
1660											
1260				"	"	"	"	4			
1600											OK, but

Vector Comp Guy system has end still feels rough, sluggish. Sometimes one feels the need to be slightly forceful in order to be sure it has gone full intended travel.

81 Drive Tests

Emulsion Batches:

Date Apr. 20-21. 87 Observers T.A.

Using EST Clock

Plate No.	Object	R.A. ~~1900~~ 1875	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
				20 11 14					
10.KWK	36 Lyn	09 12 59.4	+43 16 12			00 49W	+43 26		
11.KWK	"					01 02W			
13.KWK	"			20 55 50		01 27W			
14+15	16 BS 2091			21 15 00	21 16 32	21 18 00			
17	"			21 18 40		04 57W			
18	"			21 32 30					
19	"			21 36 13					
20	"			38 30					
21	"			21 38 52	21 46 30	05 21W	+46 07		

Spectr. Temp. ..... Dome Temp./Hum. 68°/63% Transparency Conditions ..... Hazy ... No Wind 82

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... / .....

Computer Clock Reads 30 secs earlier than Astro Clock. It's also DST not EST

Exp. Mtr. # of FRAMES	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
300											
300										(Don't use 12.4WI with previous frames. R.A adjusted, Do not track this one.)	
300											
300									Don't use 14-17 with remainder of Frames		
	Poor								Not 90sec multiple yes 2x on grism		
300*	Poor								7 mins 38 secs for 300 frames?		

83 Cont Drive Tests

Emulsion Batches: .....

Date Apr 20-21 Observers TG

Plate No.	Object	R.A. ~~1900~~ 1987.5 ~~1900~~	Declination	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparis Type/Filter
22	BS 6588	17 39 06.7	+46 00 45	220000				
23	"			0130				
24	"			0300				
25	"							
26	BS 6588	17 39 06.7	+46 00 45	221600				
27	"			1730				
28	"			1900				
29	"			2000				
30	"			2800				
31	"			2930				
32	"			223012				
				4025	Sign-f too wk			

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 63°F / 80%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							4057				
							4115				
							31				
							53				
							4210				
300 frames							18		Too near RH edge of Box during most		
1 (2on guider)				Started over with star centered in box						(dont use previous frames)	
"											
"											
750 2on guider									Plot Looks Flat?		
1											
1											
180 2on guider			Note some frames are blank (var star?)						Worm Leaving K3 @ 22 33 EST		
180 2on guider									ie K3 is 3rd groove Right of K at E side of worm gear		
	Seeing suddenly very bad,			trouble saving files						F=show files now doesn't do anything	

85 Sun-May Drive Tests

Date Apr. 26-27/87 Observers K.K.-T.v.

Emulsion Batches:

Plate No.	Object	R.A. ~~1900~~ 1987.5	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
	BS 3881	09 47.8	+46 05	19 51 00		00 05 W			
09.	B "	Hung up — Restart		19 57 01		00 11 W			
10									
11				20 00:00					
17				01:30					
13	all stars in			20 03 00					
14				20 09 30					
15				20 06 00					
16				07 30					
17				09 00					
DT 32				20 19 00		42 W			
FM 18	83 Leo	11 26.5	+3 17	20 42 12	2 frames	0 44 E			
FM 19	"			20 45 26	2 frames				
FM 20	Bri star next to 12 Her	16 38.5	+49°	21 06 00					
				21 09 05					
				21 10 30					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..Fine.....

Focus ..... no wind

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
											Spect may have been touching slit	
											Image moving left on screen	
200 frames		(image hit edge ~ frame 120)									Glow P/Q	
150°		28"9			.: North "up" ≤ East on "Right" of screen						Scale on Fil	

87 pg 2

Date Apr. 26-27 Observers .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	near 42 Her	16 38.5	+49°	21 12 00					
(FM-21?	)			21 15 04					
(for whole	bunch)			21 16 30					
	"			21 18 00		05 22 E			
21	"	"	"	21 24 00					
	"	"	"						
	"	"	"	21 27?					
DT ... 33	Drive test on	same	"	21 33		05 06 E	+49 03		
FM 22	BS 2483	06 45 5		21 50 30		05 06 W	+43 46		
FM 23	for all			21 54 00					
				55 30					
				57 00	→ 22 06 00	@ 90 sec intervals			
DT 34				22 ≈ 08 10					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										premissed	
	LH	image		To get dec axis as seen on screen							
	RH	image		"	"	"	"	"	"		
100 frames		Drive		Test.							
										Gear Q3	
Guider Test for scale with comp in fld											
Drift set of frames											
100 Frames @ 95 columns,					(95 blank, sat down slowly)					@ 2x on guider	

89

193

Date ...Apr. 26-27..... Observers ...T.m.....

Emulsion Batches:
.IIaO.E.....04.10.7
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
4996FI	Focus Test			23		0 0	+4 42	FeNe clear	90 30
F2						"	"	"	"
F3								"	"
F4					23 30			"	"
Drive	Tests	Apr 28-29		Tues-Wed - MK III & Astro clocks within 4 secs					
DT 00035 KWK	BS 5110	13 34.2	+37 15	20 14	20 27		+37 24	300	
35.AN H								"	
36.KWK	Lost - had to restart ??			20 39	20 56			400 frames	
36.KWK	Wrote over 1st 36.KWK ("0" was there)			21 06	21 07			20	"
~~37.KWK~~	BS 5110	13 34.7	+37 15	21 10	21 29 30	02 00E		400	"
over exp 10 sec	Note 37.KWK had nothing in it. Saving on			Dist was	taking forever, so I restarted ??			Now on	
37.KWK	BS 5110			21 32				200	
37.AN H									
38.KWK	BS 5110			21 42	21 56			400	
38.AN H									

Spectr. Temp. 51°f ..... Dome Temp./Hum. 48°f / 42% Transparency Conditions 90

Focus ... 390 ..... 7 or 9 seeing best

Spectr. Temp. 51°f ..... Dome Temp./Hum. .....

Exp. Mtr. B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2272 2250				BC	830/1402 1290	BS	IIaO-E	4			
2200							"	5			
2300 2160							"	5	with thin paper shim in RH contact pt.		blue end weak
2250 2280							"	4	" " "	" " " "	blue end → red
Gear at Beginning		H=83%, Dome T=42°f							Frame Size		
R:@20:14	Fair	5:38	F2 IIc	Image moving right & down is Dec		BS	Int Time=0		71 Columns	Image above BS	
									npf=6	8957 bytes 7,054,208 free	
S9@2046 (9th notch R of S@LHS of worm)									71 columns	(R: means R:@LHS of worm) no box or guiding changes for 35 → incl 36 no guiding either	
Test to see if frames have to be saved in order to cont to "A" I guess they do!									npf=9 for 36 IAN#		
S:7@2127EST							Int Time=0		63 columns	box & star recentered.	
this restart, I said "N" to Double Dos, Is that the problem?											
									63 columns	box star recentered	
									npf=9 (Ok) slope ✓		
Moved Dome @ (100 frame pt)									63 columns	no guiding or box change	
									npf=9 Ok 51 slope ✓		
									over		

91 Cont ~~Cont~~

Date Apr. 28-29 Observers JL

Emulsion Batches:

Plate No.	Object	R.A. ~~1900~~ 1987.5	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
OT 39. KWK	BS 5110	13 31.2	+37 15	21 58 40	22 12 50	01 13 E		400 frames	
39. ANH	Analysis								
40. KWK	BS 5110			22 18	22 53 20		+37 25	max 999 frames	
40. ANH	Analysis OK								
41. KWK	BS 5110			22 55	23 31 33	00 06 W		999 frames	
41. ANH	Analysis			41:10 or almost V e		end			
42. KWK	BS 5110			23 34	23 48 23	00 23 W		400	
42. ANH	Analysis OK								
43. KWK	BS 5110			23 50 30	23 57 28	00 32 W		200	
43. ANH									
44. KWK	BS 5110			23 59	00 06 05	W		300	
44. ANH									
45. KWK	BS 5110			00 08 00	00 14 59			300	
45. ANH									

Spectr. Temp. ..... Dome Temp./Hum 38°/90% Transparency Conditions ... Fine ..... 92 ....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum 36°/97% .....

~~Exp. Mtr~~ Gear Pos	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~ Int time	P.H.	~~Program~~ # Columns	Remarks	Quality
T:8@end		5.38	F2 IV		111,200 bytes	BS	0		63	no box or guiding changes	
					11,257					start in To slope —	
	so so					BS	0		63	done turned @ ≈ 50 frame pt.	
									npf = 9	slope sl down	
1:3@2306	so so	image moving down in dec				BS	0		63	done turned @ ≈ 50 frames	
1:6@meridian		passage (0 Hr L) @ ≈ 840 frame pt.							npf = 9	slope down — ok	
1:1@end						BS	0		63		
									npf = 9	slope down	
V:7@end						BS	0		63		
										slope down ok	
						BS			63		
										ok	
V:9@end						BS	0		63		
To be exact; V:8 had just become disengaged from worm by 00 14 55 MK III time in last few frames											

93 Wed-Thurs Drive Tests

Emulsion Batches: .....

Date Apr. 29-30/87 Observers ..Tn..... .....

Gear V:8 @ Start .....# Frames Tot

Plate No.	Object	R.A. 1987.5 (1900)	Declination (1900)	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
46.KwK	BS 5392	14 23.6	+5 53	19 51	195807	09 15 E	+	200	0
46.ANH	analysis								
47.KwK	5392			20 01	200803			200	0
47.ANH									
48.KwK	5392			20 0938	20 2341	03 47E	+6 04	400	0
48.ANH									
	Apr 30 May 1/87		Both Astrs	Best clocks	absolutely	synchronized			
DT 0000 49.KwK	(BS 5200)	13 49.9	+15 52	19 4559	195305	3 41 E	+1602	200	0
49.ANH	Analysis								
50.KwK	BS 5200			19 5800	200507			200	0
50.ANH									
51.KwK	BS 5200			20 0830		E		400	x2
51.ANH									
52.KwK	BS 5200	Prob no good too much drift to Right		20 2940	211238	2 20E		999	x 6

Spectr. Temp. ..... Dome Temp./Hum. 46°F / 63% Transparency Conditions Fine 94

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Gusty from NW; not too bad if Telescope in E to SE

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program # Columns	Remarks	Quality
	50 50			Image moved to upper right fast		BS			63	Started with image just above the "5" on screen	
										slope up - OK	
									63	moved box & telescope slightly	
W•10 gear just left W•9 @ end									63	dome turned @ 50 frame pt Loosing image - cloud @ 250 frame	
										(no change to image or box) slope / OK	
@ 19 48 20, W:9 just leaving LH end of worm gear. (ie LH thread of worm starting down)											
	OK	5.58 K5+m				BS			63	sl cloudy	
									nfp = 7	Fine slope —	
									nfp = 7	sl slope — OK	
	50 50	X•3		just left worm at end			[Image lost on some frames]		71 columns	image moved Left & box to recenter changed	
									nfp = 9	Funny slope —	
Z5 @ end						Done turned @ 80 frame pt			71	move image Left again	
		lost image off R of Box @ 500 Frame pt. moved Left @ 600 Frame pt									

OVER →

95 Cont of

Date . Apr. 30 - May 1 .. Observers ... Jn .....

Emulsion Batches:

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.....

.....

TV Integrat

Plate No.	Object	R.A. ~~1900~~ 1987.5	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
52.AN#	Analysis of "Bad" integration							# Frames	
53.KWK	BS 5200	13 49·9	+15 52	21 17 50	21 51 29	1 41 E	+	800	×4
53.AN#	Note this analysis for its changing slope!				Inside no adjustment except for			I have move,	
54.KWK	BS 5290	13 49·9	+15 52	21 59 09	22 41 42			990	×9
Note. It is my observation that as the noted groove starts to leave the worm gear, that the main dip of the									
54.AN#	Analysis								
55.KWK	BS 5290			22 46 20				700	×0
55.AN#									
56.KWK	BS 5290			22 56 50	23 38 29	0 0 7 W	+16 01	990	×9
56.AN#									
57.KWK	720ph (still labelled BS 5290)	18 06·8	+9 34	23 49 00	23 57 12	3 52 E	+9 44	700	×0
57.AN#									
58.KWK	720ph (still labelled BS 5290)			00 00 05	00 16 31	3 33 E		400	×0
58.AN#									

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Sl. Hazy ... steady 9.6

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 37°F / 64% not much wind

Exp. Mtr. gear posn	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	~~Program~~ # columns	Remarks	Quality
at end										looks OK but discontinuity	
K:1 just left gear	OK	5.58		Dome moved near 100th frame		BS	(Some Frames missing)	not drifting to Right so fast now.	(71 is optimal 71 for fld size)	Repos. moved Image at Left	
No wind either.									nfp=9 Interesting slope		
Z:7	dome move @ 780th frame			(Image starting to drift Left now)					71	Repositioned image to Left, some cloud	
90sec period starts to occur.				At some time, the RHS of worm is starting to engage next notch. (I just like to verify this visually but it is obvious. groove.					nfp=9	OK slope	
7:3 just Left gear (more accurate than most notings)			d						71	recentered	
									nfp=9	OK Flat	
4:3 (just starting to leave gear) → very accurate timing				done turn @ 60th frame					71	944th frame last no recentering from previous	
									nfp=9	very nice semi flat	
4:5 about to leave	very poor	3.85	A+IVs			BS			71	Image moving to upper right fast Cloud too	
									nfp=9	steep straight slope	
38 (still solidly in gear @ end starting to leave a 30secs after last frame)									71	reset image to Left edge of box	
									nfp=9	Wow	

97

Emulsion Batches:

Date . May 1 cont. Observers . Jn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
DT 00059 KWK	77 Oph	18 06 8	+9 34	00 22 03	00 38 25	3 13 E	+	400	x0
59. AN#									
60. KWK	77 Oph			00 42 00	00 50 11	3 00 E		200	x0
60. AN#									
61. ~~KWK~~	77 Oph			00 53 44	01 01 55	2 48 E		100	x0
61 AN#									
62 ~~KWK~~	~~77 Oph~~			01 05 51		Cancelled due to clouds		400	x0
62 AN#						Left drift of image			

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

~~Exp. Mtr.~~ Mean D end	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	# ~~Program~~ Columns	Remarks	Quality
:13 well into worm	~~50~~	3.85	144 Ts	(Dome turned @ 110th frame)		BS			71	image moved to LH side of box ~~before~~ start, but rapidly moved R during integration (steep slope)	
									nfp=9		
:10 just left LH worm	OK					BS			71		
									nfp=9	OK some / slope	
B:8						BS			71	no change of image posn from last integration.	
									nfp=9	getting flat ~~OOOO~~ OK	
	poor					BS			71	getting cloudy (image moved Left during integration)	
									nfp=9		

15

99 Sun–Mon Gear posn 6:8 → F8 not done, because of Sat Nite Tour usage of telescope Emulsion Batches:

Date May 3-4/87 Observers TJ using comp time TVIm

Plate No.	Object	R.A. 1900 1987.7	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	# From F Type/Filter	Comparison Exp	
OT 0000 62.KWK	BS 5110	13 34.2	+37 15	19 45 ≈30	19 53 41	03 12 E	+37 25	200	×0	F05
62.ANH	Analysis									
63.KWK	BS 5110			19 56 02	≈20 36	02 30 E		999	×0	G4
63.ANH	note this one									
64.KWK	BS 5110			20 40 28	20 48 39	02 17 E		200	×0	G9
64.ANH										
65.KWK	BS 5110			20 51 21	20 59 34	02 07 E		200	×0	G08
65.ANH										
66.KWK	BS 5110			21 05 03	21 46 10	01 19 E		999	×0	H10
66.ANH										
67.KWK	BS 5110			21 50 31	22 31 38	00 34 E		999	×0	H:10
67.ANH	OK s/slope									
68.KWK	BS 5110			22 36 44	23 17 51	00 12 W		999	×0	
68.ANH	Very interesting									
69.KWK	BS 5110			23 20 50	23 29 02	00 23 W		200	×0	

Spectr. Temp. ..... Dome Temp./Hum. 46°F / H=47% Transparency Conditions .. Fine 100

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

Comp time behind Astro by 4 secs
I had it right on on Thurs-Fri

gear posn Exp. Mtr. at END	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	# columns Emulsion	nFP Rtt.	Program	Remarks	Quality
F•5	good	5:38	F2 IV			BS	71			no wind at all	
								7		s/slope ✓	Fine
G4						BS	71			no change of box or image from previous	
								7		s/slope ✓ ?	
G•1 just left gear						BS	71			no change from previous image moving down i bright	
								7		s/slope ✓	
G•8 just left gear						BS	71			again, no guiding or box changes	
								7		Flat	
10 (good-soso)				Big Dome Turn between these		BS	71		very light North breeze	Image refocused first Image recentered first	
				integrate				7		OK s/slope ✓ curved	
4:10 just leaving worm						BS	71			Image moving down in dec no change in ~~may~~ guiding from previous	
just noticed that date on Dest computer is wrong -								7 ie	Sat May 2 1987. ?	may change it ? ? Later.	
:1 about soso				no wind at all		BS	71			Image recentered first & focussed	
start leaving worm)				meridian passage				7	slope	✓	
:9						BS	71			no guiding or box change from previous int	
										image may have gone too far Left	

101 Cont

Emulsion Batches: .....

Date Aug 3-4/87 Observers ...T.H..... .....

.....

Plate No.	Object	R.A. 1900 1987.5	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
PT 0000 69. HN #	Analysis of	BS 5110							
70. KWK	BS 6695	17 55.8	+37 15	23 39 42	23 47 54	03 40 E	+	200	x0
70. AN #	Analysis	OK							
71. KWK	BS 6695			23 50 40	23 53	03 35 E		70	x0
71. AN #									
72. KWK	BS 6695			23 55 32	00 36 39	02 50 E		999	x0
72. AN #	Note this one								
73 KWK	BS 6695			00 40 11	01 21 18	02 06 E		999	x0
73. AN #									
74. KWK	BS 6695			01 25 20	02 06 27	01 21 E	+37 25	999	x0
74. AN #									
75. KWK	BS 6695			02 10 11	02 51 18	00 35 E		999	x0
75. AN #									
~~76. KWK~~	~~BS 6695~~			~~02 55 42~~	~~03 03 54~~			~~900~~	~~x0~~
	Not able to save or analyze - hung up								

Spectr. Temp. ..... Dome Temp./Hum. ...../..... Transparency Conditions ...Fine..... 102...

Focus ..... Barometric pressure fairly high 1026 kpc's rising V light N wind

Spectr. Temp. ..... Dome Temp./Hum. ~~37°F~~/.60% @ 0 hr EST

Comparison Filter	Exp.	Exp. Mtr. (0 End Clear Dish)	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	# Columns Emulsion	hfp PH.	Program	Remarks	Quality
										7		slope	
		K·1 just	OK	5.20	K1			BS	71		exactly same dec as previous star.	started to Left of Fld.	
		starting to leave worm (very exactly noted)								7		slslope	
		K·5 fully	OK					BS	71			no change to guiding or box	
		engaged in worm								7		slslope	
		L·4 fully	so so					BS	71		getting close to west of Dome opening @ End	image moving right at first	
		engaged in worm		Dome moved after integration						7		wow	
		L·4 fully	poor					BS	71	Far Right of Box at end		moving down no changes to guiding in Dec & To Right of Box	
		engaged								7		Slight slope	
		M·4 fully	so so → OK					BS	71			had to Recenter image	
		engaged								7		semi flat	
		N·4 fully	so so					BS	71			no change to box or image	
		engaged								7		semi flat	
		N·2 just	so so					BS	71			No changes of image since last 4's	
		leaving worm								7			

103 Mon-Tues

Date May 4-5/87 Observers T.S. Emulsion Batches:

Clocks Date Reset -- Clock within .2 sec of Astro

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	# Frames Type/Filter	Comparison Exp.
DT 0000 76.KWK	BS 5392	14 23.6	+5 53	19 54 12	20 02 24	E	+6 03	200	x0
76.ANH	Analysis								
77.KWK	BS 5392			20 05 49	20 14 01	E		200	x0
77.ANH									
78	BS 5392			20 16 57	20 25 09	03 27 E		200	x0
78 ANH									
79 KWK	BS 5392		Start of Sky Spect +00	20 30 38	21 11 45	02 40 E	+6 03	999	x0
79. ANH									
80.KWK	BS 5392	14 23.6	+5 53	21 14 18	21 55 25	E		999	x0
80.ANH									
81.KWK	BS 5392			21 58 55	22 40 02	01 11 E		999	x0
81 ANH									
82	BS 5392			22 43 46	23 23 53	00 07 E		999	x0
82 ANH									
83.KWK	BS 5392			23 27 06	23 55 54	00 04 W		700	x0
83 ANH									

Spectr. Temp. ..... Dome Temp./Hum. 50°F. / 46% Transparency Conditions ... Fine ..... 104 .....

Focus ..... Air pressure 102.9 kpa & steady no wind

Spectr. Temp. ..... Dome Temp./Hum. ..... @ 20h EST

Exp. Mtr. (worm gear @ End)	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	# columns	Program	Remarks	Quality
M:7 just starting to leave worm	soso	5.22	AS V	BC		BS		9	71 OK - slope	dips sloping down @ end (very exact)	
:5 firmly in worm						BS		9	71 Reposition image to lower left before starting OK slope		
:3 well in						BS		9	~~OK~~ 71 ~~slope~~ OK - s/slope	No change in image posn from previous int Just out of dipe end	
:2 just left worm											
:4 well in worm	poor	Comp for 45/145	Sky spectrum 1200/50:7			BS	IIaO-E	9	71 Image moving close to upper R of box → end	Recentered image before start had to move dome @ Frame # 690	
:3 well in	poor					BS		9	71 Recentered image before start. Dome turn @ 516th frame slope		
:3 well in	OK					BS		9	71 Recentered & focused before start OK s/ slope		
:2 just left gear											
:2 well in	soso					BS		9	71 no guiding changes from previous int Dome turn @ 770th frame ~~slope~~ Flat → / slope		
:3 just left worm	OK	Meridian passage at 583 th frame				BS		9	71 no change from previous image s/ slope down		

105 cont

Date May 4-5 1967 Observers J.M.

Emulsion Batches: .....

Plate No.	Object	R.A. ~~1900~~ 1987.5	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
PT 0000 84. KWK	BS 5392			23 58 36	00 27 24	00 37 W		700	x0
84. AN #			end of Sky Spectrum		00 29 .	"			
85. KWK	BS 6220 * still labelled BS5392 by mistake.	16 42.5	+38 57	00 36 27	00 44 39	01 25 E	+	200	x0
85. AN #	Note. The intention of setting on BS6220 at this time is to match for Hr L, Dec and Gear of								
4996T	Sky Spectrum while doing ~~this~~ BS5392 on			20 31	00 29	00 38 W	+6 03	FeNe clear	45-45
86. KWK	BS 6220	16 42.5	+38 57	00 47 59	01 29 06	00 41 E		999	x0
86. AN #	Analysis								
87. KWK	BS 6220			01 33 33	02 14 40	00 05 W		999	x0
87. AN #									
88. ~~AN~~ KWK	BS 6220			02 18 17	03 00 18	00 51 W	+39 07	999	x0
88. AN #									
89. KWK	BS 8097	~~=~~ 109.7	+10 05	03 11 14	~~03~~ 03 19	E	+10 16	200	x0
89. AN #	Note - designed to match Obs of 46. KWK -> ~~48 scanlon~~								
* 90. KWK	BS 8097	(didn't save or analyze)		03 23 03	03 39 29	E		400	x0
	"			03 45 00					
DR TEST	Bombed again ?								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .... No wind at all 106

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ~~107/65~~ ...

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	nFP ~~P.H.~~	# columns ~~Program~~	Remarks	Quality
T:4 just left	OK	5:22	A5 V			BS			71	no change from Previous 1 hr's	
								9		OK sunous last time	
T:6 firmly		445	G7 III-IV			BS			71		
in worm Observations of Apr 28/29 starting at DT000039.KWK								9		Big amplitude sl slope —	
50				BC	1200/507	BS	IIa-E	5		not much	
1:6	~~Poor~~ OK	"				BS			71	image recovered before start	
								9		Flats OK	
V:6 well in gear						BS			71	no ~~image~~ change from previous integration	
								9	7h	sl slope : —	
V: 7 Avoid in gear	so so	Moved dome		at 460th frame		BS			71	moved image up in Dec to avoid BS	
								9	slope \	Image getting close to upper Left of Box, but didn't get too far by end.	
≈W10	poor	4.95	F0pv			BS			71	~~Prob OK~~ s:	
								9		OK slope /	
V:3 well in V:17	poor					BS			71	no guiding or box change from previous	
	poor					BS			71	" " " "	

107

Tues-Wed

Date May 5/6/87 Observers TH Ly

Emulsion Batches:

8m 650 Tad-E 375 04107

5m 680 Tad-efg 225 21 Apr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49966F	Focus test			19 47		0 0	-1° 15'	FeNe Clear	120 40
DT 0000 90. KWK	(δ Vir) closed dbl	12 41	-01 23	19 5257	20 0109	2 04 E	"		
DT 90. ARA	" "								
Fm 24	" "								
25	" "								
49966	HD 86360	09 52.9	+12 55	20 17	21 38	2 16W	+12 40	FeNe Clear	90 90 90
49966T	Spot Calk for 49966	-72.		15mi-⊙104		175V 3900	150 4300	150 4810	
49967	HD 139892	15 35.6	+36 58	21 49	23 20	0142E	+36 51	FeNe Clear	90 90 90
49968	"	"	"	23 24	00 15	00 47 E		"	90 90 90
49969	"	"	"	00 20	01 10	00 07W		"	90 90 90
Fm 26. KWK	"			00 21 03		##			
49970	HD 139892	15 35.6 1987.5	+36 58	01 17	02 09	01 06W		FeNe Clear	90 9090
FM 0000 27 KWK	BS 7141 θ Ser dbl	18 55.6	+4 11	02 18		02 00 E		Fm 25. KWK	
DT 0000 91. KWK	"	Just too late to see what happens		02 21 32		~~02 00~~ E			
91. ARA	"								

Spectr. T
Focus...
Spectr. T
Exp Mtr
2600
3550
X10 'A
2000
1300
1000
2000
90 23
200
200
90 90
90
90 90 90
200
200
25 40
Dbl

Spectr. Temp. 58°F Dome Temp./Hum. 55°/40% Transparency Conditions ... Fine 108.

Focus 3.87

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. & Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2600											✓
2550				BC	1200/5007	BS	IIaO-E	5		cents More Red @ Blue and center Red	
X10 'n worm & end				Image above slicer		BS			11 columns	I knows Im early, just for fun of it.	
				"		BS		9 nfp		Flat	
				"		BS			71		
				"		BS			71		
22000											
21300	OK	5.22	B9 IV	BC	1200/5007	BS	IIIaJ-efg	5	SB Bln		OK
							IIIaJ-efg				✓
17000											
20000	Poor	5.0	B7 V	BC	1200/5007	BS	IIIaJ-efg	5	SB-Ly.	seeing getting very bad	ok
20023											
20,000	Fine	"	"	"	"	"	"	"			OK
20,200		"	"	"	"	"	"	"			comp ok Exp Ok !
20,200	Fine					BS				(but fuzzy edges ??)	
20,300											
19900	Fine	5.0	B7 V	BC	1200/60.7	"	IIIaJ-efg	5	SB-Ly.		ok
as well	ok	4/4		PA 103°	Sep 22.3	in 1926	in Slicer		Fld	Field scaling purposes	
0.5 just beginning to leave worm						BS	71 columns	nfp 9		Oh well	✓

109 Pg #2 cont

Date . Aug. 5/6/8.7.... Observers .L.g.-T.c.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49971	HD139892	15 35.6	+36 58	02 38	03 36	2 33 W	+37 50	Fe Ne Clear	90 90 90
49972	HD161096	17 38.5	+4 37	03 46	04 17	1 11 W	+4 45	"	130 130
Drive Tests May 6/7/87, In after sl				*Lowering of worm mounting plate (by* day staff)					
Drum 92 KWK	BS 5110 not on Label	13 34.2	+37 15	20 04 09	20 06 20	02 50 E	+37 25	50	x0
92 An #				~~20 07 59~~					
93 KWK	BS 5110			20 07 59	20 16 11	02 40 E		200	x0
93 An #									
94 KWK	BS 5110			20 33 53	20 41 44		Ge 3 f. only in	200	x0
94 An #									
95 KWK	BS 5110			20 43 53	21 12 41	01 43 E		700	x0
95 An #									

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Fine ..... 1.10 ....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +44°F / 50%

Comparison Filter	Comparison Exp	Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	30 30	20,200 / 7198	Soso↓ Fine	5.0	B7 V	BC	1200/50.7	BS	IIIa-eFg	5	SB / Ly	T=52°F Set 389	OK
	130 130	29825	poor	3.93	K2 III	"	"	"	"	"	std vel		fine
		Gear posn @ End	Fine	5.38				BS		nfp	# C Columns	Dome temp = 60°F H = 40%	
	xO	F:9 Just Leaving									7?	Bar pres 101.2 ± falling	
										7		Yes, it has the dip	
	x	F:6 Firmly in gear	Fine								7!		
		—		(program didn't like an nfp of 7 this time)						9	v.s.l slope	—	5.5 dips all right
	x	Note RH end of worm starts to engage gear after LH end has left gear. It is when RH end is starting to engage that the rapid West "dip" starts. I would think that a slight lowering of RH end of plate would be the direction to go. Tu								7!			
										9		Flat	
	x	F:4 firmly in	Fine					BS			7!	Cloud by 570 th.: turned up intensity for	
										9		Lost by 640th	
											v.s.l slope	—	

III

Date Aug 6/7 cont. Observers Jn

Emulsion Batches:

Plate No.	Object	R.A. 1900 1975	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Disco 96. KUK	BS 5392	14 23.6	+5 53	21 46 39	21 54 51	E +		200	x0
	I checked visually on outside monitor to note the relative posn of worm								
	90 sec periodic error.								
	When "dip" starts, The RH worm is starting to get ~~out~~ fully into the								

Spectr. Te
Focus...
Spectr. Te
Exp. Mtr.

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. semi cloudy ..... 112..

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Fine	5.22	ASV			BS			71	smeared	
								9		sl slope ✓	

gear when Image makes it's fast "jump" West, corresponding to the main "Dip" in the next notch of main gear. The LH worm is well un engaged at that time and wouldn't have anything to do with the "Dip"

Comp. I would think that the "West" thrust of the RH worm coming in to engagement is the logical cause. ∴ I would lower RH (West) end of worm plate, or raise the LH end of worm plate slightly at 1st.

113 Thurs-Fri

Date MAY 7-8 1987 Observers J.H. / L.G.

Emulsion Batches:
IIa-E .315-.0407
IIa-S:Cfg .215-.21 Apr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49973	HD 72359	08 27.2	+10 24	20 05	21 27	03 38 W	+10 17	Fe Ne Clear	35 35 35
49974	HD 139892	15 35.6	+36 58	21 36	22 59	01 55 E	+36 49	"	90 90 90
49975	"	"	"	23 04	00 20	00 34 E	"	"	90 90 90
49976	"	"	"	00 25	01 22	00 30 W	"	"	90 90 90
49976T	Spot Calib for		49974-	76		15 min @ D4 17.5V 3900	15V 4300	15V 4810	

Spectr. Temp. ...+53°F..... Dome Temp./Hum. 1487/..45?. Transparency Conditions ....Fine..... 114

Focus .....389.....

Spectr. Temp. ...48°F..... Dome Temp./Hum. 40../..47?

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3500											
3500	OK	6·2	A0V	BC	1200/-07	BS	IIIa0-e	5	SB Ly	No severe RH osc. 4½?	slwk
20100											
20054	so so	5·00	B7V	"	"	"	IIIa J-exp	5	SB Ly		OK
196-											
20005	so - so	"	"	"	"	"	"	5	SB Ly		OK
17000											
17600	"	"	"	"	"	"	"	5	"		OK
							"				V

115 Tues. - Wed.

Date May 12-13/87 Observers Lgt / Tn

Emulsion Batches:
8m68 IIa-O 2315 - 04107
5m68 IIIa-J cfg 2415 - 21 Apr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
DT0000 97 KWK	HD 66751	7h 59m.9	+70°.0	20:11:12	20 19 24	3 13 W	+69° 38'	200	x0
97.AM#	Looks fairly flat, not much if any of the 90 sec periodicity			20h26m					
49977	HD 66751	7h 59.9	+70.0		23 19	6 13 W	+69°38'	Fe Ne clear	45 45
49977T	Spot Calib for 49977 - 78, 81,				15 min @ 15V	04 3900	03 4300	02 4810	
49978	HD 158633	17h 25m.3	+67° 24'	23h 32m	01h 56m	0h 24m E	+67 28	Fe Ne clear	45 45
49979	HD 137909	15h 23m.7	+29° 27'	02 06	02 33	2h 11m W	+29°19'	Fe Ne clear	130 130
49980	HD 159561	17h 30m.3	+12° 38'	02 42	02 47	0h 18 W	+12° 44'	Fe Ne clear	130
49980T	Spot Calib for 49979				15 min @	17.5V 04 3900	15V 03 4300	15V 02 4810	
49981	HD 161096	17h 38m.5	+4° 37'	02h 56m	03h 02m	0h 24m W	+4° 44'	Fe Ne clear	65 65-65
49982	HD 182640	19h 20m.5	+2° 55'	03h 11m	03 44	E	+3 15	Fe Ne clear	75 75
DT0098 KWK	Drive Test	"	"	03 48 30	03 56 42	00 23 E	"	# Frames 200	Int X0
98.AM#	Analysis						"		
99 KWK	HD 182640			04 01 30	≈04 09	00 11 E	"	200	x0
99.AM#									
49982F	Focus test					00 08 E	"	FeNe clear	

Spectr. Ten
Focus
Spectr. Te
Exp. Mtr
T: 2 sec
Leaving
3500
3501
45
5522
3523
59-9
TF:59
7:09
22316
2.5
8:09 in
warm up
end
8:17 in
warm

Spectr. Temp. 59°F ..... Dome Temp./Hum. 53°F / 64% Transparency Conditions ..a bit hazy ⇒ 0.1e 116
clear later

Focus ~~set~~ 386 -> 389

Spectr. Temp. ~~45°f~~ ..... Dome Temp./Hum. 43°f / 75%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
T: 2 just Leaving Blue filter	O.K.	V = 6.48	dF8	~~BC~~	~~1200/50.7~~	BS			7 columns	Reversed	
(not much drive error expected at + 70°)								nfp = 9 pts		not bad off hand	
3500 3561	O.K.	V = 6.48	dF8	BC	1200/50.7	BS	IIaO-e	5	Asm-spec/ICK	change focus → 386	sl wk uneven
~~Test~~							IIaO-e				ok
5522 3523	O.K.	7.09	dK1 or 69V	BC	1200/50.7	BS	IIIaO-e	5	Asm-spec/KK	no longer reversed	good
39149	good	3.93	F0p	BC	1200/50.7	BS	III aJ-efg	5	"	T = 48° Set 389	blue end focus poor
35259	good	2.2	A5 III	BC	1200/50.7	BS	III aJ-efg	5	"		fair
							III aJ-efg				ok
7109	~~poor~~ O.K.	3.93	K2 III	BC	1200/50.7	BS	IIIaO-e	5	Std vel		fair
22316 20115	O.K.	3.68	F0 IV	BC	1200/50.7	BS	III aJ-efg	5	Asm-spec/ICK		fair
B: 9 in worm end	soso	"	"						7 columns		
									similar 90 sec per mm slope		
B: 7 in worm											
									look at this one		
				BC	1200/507	BS	IIIaO-e	5		Set 389 T = 45°f	sl KH a blue end

117 Wed.-Thurs.

Date May 13-14/87. Observers Lt / Tn

5m 68° IIa0-e old batch finished

8m 68° IIa0-e 3.I.5 Apr 16

Emulsion Batches: 04107

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49983F1	Focus Test				19 56	0h 02m W	+1° 50'	Fe Ne clear	120 40
83F2	Focus	"				2 25 W	+37°	"	90 30
DT000100.KWK 49983	HD 95735	10 57.9	+36 38	20 14 11	202223	2 28 W		200 fr	X0
49983	"	"	"	20h 24m	23 39	3m 45m W	+36° 16'	Fe Ne clear	35 35
49983T	Spot Calib for	49983, 84, 86		15 min @ 15V		PA 3900 D3 4300	D2 4810		
DT000101.KWK	HD 95735			234113		4 02 W	+ 36 16	200 fr	X0
.AN#									
102 KWK 49984	HD 140538	15 39.1	+2 50	23 55 46	00 03 58	0 32 E		200	X0
102.AN#									
49984	HD 140538	15 39.1	+2 50	00 09	01 48	1 13 W	+2 34	Fe Ne clear	45 45 45
DT000103.KWK 49984	"	"	"	01 50 58	01 59 21			Fe Ne clear	200 fr X0
103.AN#									
104 KWK 49985	HD 159561	17h 30.3	+12° 38'	02 06 23	02 14 46				
104 AN#									
49985	"	"	"	0219	0225	0h 01 E	+12 44'	Fe Ne clear	130 130

Spectr. Temp. 58 °F ..... Dome Temp./Hum. 55 °F / 50% Transparency Conditions ... Fine - sl. hazy ... 118

Focus ... 386 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

NEW D19

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Bc	1200/50.7	BS	IIaO-e *	5		Center Rel e blue end	
				"	830/40.2	"	" *	4		Set 386 T=57.57 Center s/Rel	
C 5 starting to leave gap	fine					"	~~IIaO-e~~	~~5~~	71 columns	nfp for AM#=7 (wings flat	
1800 1800	fine poor	V-7.60	M6	BC	830/40.2	"	IIaO-e	5	Asm Sp KK		sl. flex
							IIaO-e				v. v
F: 4 in worm						BS			71 columns.	No severe RA oscillation (seems cured)	
							nfp 7			slope \	
F: 3 Leaving	Fine	6.55 ~~6.60~~	dG5	BC	~~830~~/50.7	BS	~~IIaO-e~~	~~5~~	71 columns		1.07
							nfp=7			Obvious 96 sec period	
3504 3500	50-50 ~~OK~~	6.55	dG5	BC	1200/50.7	BS	IIaO-e	5	Asm Sp KK		good
H: 1 coming in	OK					BS			71 columns		1.11
							nfp=7				
1 in	50-50	2.2	A5 III								
34589	OK	2.2	A5 III	BC	1200/50.7	BS	IIIaJ-eg	5	KK asm sp		good

119 Pg. #2 Wed-Thurs.

Date ..May.13-14/87.... Observers ..Lyt H^.....

Emulsion Batches:
..IIIa-J-Eky. 2.15.....Apr 21
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49986	HD 187691	$19^h 46.^m2$	$+10° 10'$	02 35	03 04	$1^h 37^m$ E	$10° 34'$	Fe Ne clear	65 65
49987	HD 182640	$19^h 20.^m5$	$+2° 55'$	03 12	0337	E	+3 16	Fe Ne clear	75 75
49987T	Spot Calib	for 49985,87			15min @	D4 17.5V 3900	15V 4300	15V 4810	
DT000105,KwK	HD 182640			~03 40	04 04 35	00 10 E	+3 15	600	x0
105,Ap#	Analysis								
49987F1	Focus test	May 20 (after	today's Rotn'o'mount)			0 0	$+10° 00$	Fe Ne clear	140/50
F2	"					"	'	"	"
F3	"					"	"	"	"
F4	"					"	"	"	"
	Dev @ 68°F	7 min	May 20/87 Tn						

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .... fine - sl. hazy 120

Focus .....

Spectr. Temp. ~~50°F~~ 53°F Dome Temp./Hum. +50°F/80%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6128	01c	5.7	F8 V	BC	1200/50.7	BS	IIaO-e	5	~~std vel~~		s/wk'
20082 20093	01c	3.68	Fo IV	BC	1200/50.7	BS	IIIaJ-efg	5	asm sp/KK	dave opinion: sm amt K exp	
							IIIaJ-efg				vL
K: 5 in worm	ok	moved domo @ 400th frame							71 columns		
							nfp=7			Look at this one!	
									(Domo move was well after obvious turn around of image on screen)		
				BC	1200/50.7	BS	IIaO-e	5	Set 386, T = +56.5°F		center sl brightened sloped center sl blue
								4	"		center sl blue
								3	"		center blue
								1	"	T = +57.0°F (end	center sl blue

Note LHS of PH #1 interferes with plate cap, ie catches it making uncapping difficult.

121 Thurs/Fri Hdy Hendry

Date May 21./22./87... Observers ..Jm.-Hdy.....

Emulsion Batches:
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.....

Plate No.	Object	R.A. 1900 1987.5	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	# Comparison Type/Filter	Exp.
DT ~~107Ri~~ 107Ri	5 α CrB	15 34·2	+26 45	20 37 23		E	+26 54	D frames 600	x0
107.AnH									
108ri	"			21 10 45	21 18 57			200	x0
108AnH									
109ri	"			21 23 01	21 47 41			600	x0
109AnH									
110ri	"			21 57 05	21 21 46	1 33E		600	x0
110.AnH									
111ri				21 28 31				20	x0
~~111~~									
112ri	5 α CrB			21 33 12	21 43 22			249 ~~499~~	aborted x0
112.AnH									
113ri	"			21 48 25				80	x0
113 AnH									

Spectr. Temp. ..... Dome Temp./Hum. +59°F./82% Transparency Conditions ..... Very hazy 122

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +60°F./97%

Exp. Mtr. End worm gear posn	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. n pf	Program # columns	Remarks	Quality
1:3	OK	2.2	A&V	BC		BS			71	some sensitivity variation due to clouds. Done turned @ Frame #470	
								7		slope / fairly flat	
1:5						BS			71		
								7		slope / obvious 90 sec period	
n-3 just leaving	Fine					BS			71		
								7			
n:6 just leaving (@ frame 510 I increased TV guider gain slightly due to clouds)									71		
								7		interesting ~	
									71	"	
								7		trying to see short period oscillation of order of 3/4 sec for dbl beat.	
N-1 in						BS			71	cloud at times	
								7		" "	
									23 columns	in cloud	
								7			

123

Date May 28-29/87 Observers K.K.-T.

Emulsion Batches:
III a-Aer 215 Apr 21
II a-E Apr 16

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49988	α 800 HD 124897	14 11.1	+19 42	20 37	20 41	1 27E	+	Fe Ne Clear	125 125
49989	HD 137909	15 23.7	+29 27	20 49	20 58	2 22E	+2917	"	50 50
49990	"	"	"	21 06	21 16	2 04E	"	"	50 50
49991	HD 8890	01 22.6	+88 46	21 36	21 45	E	+8918	"	50 50
49992	"	"	"	21 51	21 56	1 21E	"	"	50
49992T	Spot Calib for	49989-93			15 min 15V		D4 3900 D3 4300		120 180
49993	HD 140538	15 39.1	+2 50	22 13	23 33	0 02E	+2 41	"	60 60
49993F	Focus test					"	"		140

Spectr. Temp. 77°F ..... Dome Temp./Hum. 80°F / 75% Transparency Conditions ... hazy ..... 124 ...

Focus ... 384 .....

Spectr. Temp. ... 74.5°F ..... Dome Temp./Hum 70°F / 82%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30000			1	BC	1200/5007	BS	IIIaJ-af	4	std val		fine
8860	OK	3.93	F0p	"	"	"	IIaO-e	4	Asm Sp		fine
8033	"	"	"	"	"	"	"	4	"		fine
9256	"	2.2	F2	"	"	"	"	"	"		fine
≈9000	"	"	"	"	"	"	"	"	"		fine
							"				"
2032 2068	OK	6.55	dG5	BC	1200/5007	BS	"	4	Asm Sp		weak but OK
				"	"	"	"	4	T = 74.5°F Set 384		OK

125

Sun - Mon

Date May 31 - June 1/87 Observers Tn ... (HK checking on mo)

Emulsion Batches:

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Plate No.	Object	R.A. ~~1900~~ 1987.5	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
DT0001 14.Ri	BS 5392	14 23.6	+5 53	20 28 08	20 36 20	E	+6 01	200	x0
114.Hα									
115.Ri	"	cut short	due to cloud	20 42 05	21 02 41	01 03 E		~~999~~ 500	x0
115.Hα									
* 116.Ri	"			21 05 58	21 47 05	00 17 E		999	x0
June 1/2	Focus tests	Tn	H=90%	Dome T =	69°F				
9999 F1	Add H. and focus tests before		new adjustments			0 0		FeNe Cu-Ni	150 50
F2	(Developed @ 4 min 70°F same night)			Tn					
F3									
F4									
F5									
F6									
	~~Another~~	Remember my Tremble sheet about II PH.					Plate copper		

Spectr. Temp. ..... Dome Temp./Hum. 74°f / 80% Transparency Conditions Hazy 126

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 72°f / 96%

Comparison Filter	Comparison Exp.	Exp. Mtr. Worm gear Bosh	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. npf	Program # columns	Remarks	Quality
	x0		Fine	3.22	A5V			BS			71	Same star done May 4-5	
										7		nice S/slope	
	x0	X: 1 fully in									71	Done twice 200 frame	
										7			
		Y: 9 just left worm	sosa	* Note	"Saving File" message on too long ∴ bombed?						71		
			↙							7			
		Note	It seems we are "out of Memory. I should have noticed it.										
												T: 71.5°f Set 386 ~~386~~	
		Exp Meter 2500 2330				BC	1200/507	BS	098	1	~~098~~		
										4			
										5			
										4			
										1			
										5		T=71 °f Set 386 Sf.11	
		grabs on LH edge of PH #1 - Must uncap by hand											

127

Date 3 June 1987 Observers KK

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
4999 4F7	Focus test	+4h	+35°	(mask towards, away, toward)				Th-A	80s
F8	Focus test				repeat				
T1	Flexure test	+4h → 0h	+35°					Th-A	40s
	June 3 1987 Th			H = 6070 Dome Temp =			°f		
4994F9	Focus test			~21 hrs		0 0	+	FeNe clear	12 5
F10	"					"		"	"
F11	"					"		"	"
						/			"

207
235

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 128

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Filter	Comparison Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt (Cross)	Slit	Emulsion	P.H.	Program	Remarks	Quality
A	80s					Echelle	1200/ .325	50μ	098	1		20°C F=.302	
						"	"	.285 w .217 h	"	"		22°C F=.302	
A	40s					"	"	"	"	"			
	12	207											
	5	235				BC	1200/405	BS	098	5		T=73.5°F S=1386	Sh.T.
		"				"	"	"	"	4			"
		"				"	"	"	"	1			"
								Note	(focus test for 1200/405 v. th 098; strong				
									by ≈ 2-3 times)				
									Use diffuser with Fo No/clear @ 10 sec/5 sec				

129 Wed-Thurs

Hdy = Hendrey = Hdy

Date June 3-4/87 Observers Hdy T.m

Emulsion Batches: IIaO-e May 21; IIIaJ-tky June 2

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
49994	HD 8890	01 22.6	+8846	01 04	01 12	8 44 E	+8917	Fe Ne Clear	70 70
49995	"	"	"	01 18	01 23	8 33 E	"	"	"
49995T	Spot Calib for 49994-95			15 min @ 15V		D4 3900 D3 4300	D2 4810		
49996	HD 137909	15 23.7	+2927	01 44	02 37	3 42 W	+2904	Fe Ne Clear	70 70
49996T	Spot Calib for 49996-98				5 min @ D4	17.5V 3900	15V 4300	15V 4810	
DT 116II 116AnII	HD 137909 Analysis	"	"	02 40	02 48 15	3 53 W	+2904	200 forms	x0
49997	HD 159561	17 30.3	+2 38	03 05	03 12	2 10 W	+2 42	Fe Ne Clear	110 110
49998	HD 182640	19 20.5	+2 55	03 20	04 02	1 08 W	+3 12	"	110 110

Spectr. Temp. 73°F ..... Dome Temp./Hum. 65°F/80% Transparency Conditions ... sl. hazy ..... 130 ..

Focus .... 3.86 .....

Spectr. Temp. ..... Dome Temp./Hum. 59°F/82%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
~~3~~000	OK	~~2~~3	F2	BC	1200/507	BS	IIaO-Q	4	Asm Sp		OK
7923	"	"	"	"	"	"	"	4	"		OK
	*	c/c6	for	4999 → 5000Z			"				vv
15045 15000	~~50~~50	3·93	FOp	BC	1200/507	BS	IIIaJ-eEy	4	Asmsp~~s~~	Reversed	Fe s/wk S/wk
							IIIaJ-eEy				
8.9 in norm						BS	7/ columns			Reversed	
								npf=9	reversal in RH direct.	of course. Iguess comp wk	
28464	Poor	2·2	AS II	BC	1200/507	BS	IIIaJ-eEy	4	Asm Sp	unreversed	OK
29833	"	3·68	FO IV	"	"	"	"	4	"		comp s/wk S/wk

131 Thurs - Fri Hdy

Date June 4-5/87 Observers ~~Hdy~~ - Tn

Emulsion Batches:
Tech Pan ..... May 21
.....
IIIa-J efg ..... June 2

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
49999	HD 66751	07 59.9	+70 00	20 39	23 15	7 43 W	+69 39	FOMC clear	60 60 60
50K	HD 158633	17 25.3	+67 24	~~-~~3 31	01 54	1 05 W	+67 26	"	60 60 60
50001	HD 8890	01 22.6	+88 46	02 10	02 14	7 38 E		"	90 90
50002	"	"	"	02 21	02 24	7 28 E		"	90 90
50003	HD 209790	22 00.9	+64 08	02 39	04 00	E	+	"	90 90 90
50003T	Spot Calib for	50003		15 min @	17.5V D4 3400	15V 4300	15V 4810		
	~~HD 222368~~	~~2~~	No time for		std vel. - Sorry.				
			BS seems too		slow! Must compare rate with slit.				

Spectr. Temp. 67°F ..... Dome Temp./Hum. ~63°F / 80% Transparency Conditions . Fine ..... 132 ...

Focus .... 386 - 388 - 390 .....

Spectr. Temp. 54°F ..... Dome Temp./Hum. ~50°F / 88% ...

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3000 3310	soso	7	dF8	BC	1200/507	BS	IIaO-e	4	Hsm Sp	reversed	s/wk
3201 3220	OK	7.09	dF1	"	"	"	"	4	"	unreversed Set 388 T = 829	s/wk
7798	"	2.2	F2	"	"	"	"	4	"		fine
7487		"	"	"	"	"	"	4	"		"
17698 17760	ok	4.63	A3m	"	"	"	IIIaJ-efg	4	"	Set 390 T = 547 nice dbl EW	s/wk
							IIIaJ-efg		"		v v

Spot calib of previous night is for these IIaOs also.

Note - blank extra in IIIaJ box is from older IIIaJ unexp box Apr 9. Just threw it in for fog test.

133

Date June 8-9/87 AND June Observers KK-R

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
50004	HD 124897	14 11.1	+19 42	22.37	22 47	6h 24w	+19°23	Th-A	.1904 .3045
	~~HD 172167~~	18 33.5	+38°41						

Spectr.
Focus
Spectr

Exp M
1200
611

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....134.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1300 J 611	3"-4"	1.17	KPIII p	ECHELLE	1200/.321	50μ (.285)	IIaO e	2		COMP 1.190 MID STELLAR, 250 COMP 3.10	fine
		0.04	AOI	ECHELLE	1200/.325	50μ (.285)	IIaO e	2		LOADED IN	

135 Tues.- Wed.

Date June 9-10/87 Observers Lgt - Ri

Emulsion Batches:
Tri-X 375-0521.7
IIa-D 147-0909.7

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50004 F	Focus Test		H= 60%	Dome T =	53°F | V 2074			F	140/50
50005	HD 8890	01h 22.6m	+88° 46'	20:55	21 04	12h 25m E	89° 22'	Fe Ne clear	90 90
50006	HD 8890	01h 22.6m	+88° 46'	21 08	21 16	12h 14m E	89° 22'	"	90 90
50007	HD 137909	15h 23.7	+29° 27'	21 30	2218	2h 15m E	+29° 20	"	90 90 90
50007T	SPOT CAL FOR PLATES 50005		-06,08.	15 MIN @ 15 VOLTS		① D4 3900 ② D3 4300 ③ D2 4810			
50008	HD 140538	15h 39.1m	+2° 50'	22 24	00 27	1h 37m W	+2° 45'	Fe Ne clear	60 60
50008T	SPOT CAL FOR PLATES 50007		-09→12*	15 MIN @ D4		① 17.5V 3900 ② 15V 4300 ③ 15V 4810			
50009	HD 159561	17h 30.3m	+12° 38'	00 34	0046	0h 06m W	+12° 45'	Fe Ne clear	120 120
50010	HD 182640	19h 20.5m	+2° 55'	00:01	01 46	0h 45m E	+03 15'	Fe Ne CLEAR	120 120
50010T	SPOT CAL			15 MIN @ 15 VOLTS		① D4 3900 ② D3 4300 ③ D2 4810			
50011	HD 161096	17h 38.5	+4° 37'	01:52	02:57	2h 02m W	+04 45	Fe Ne clear	120 120
50012	HD 196524	20h 32.9m 26	+14° 75'	02:59	03:48	00h 05W	+14°44	"	120 120
50012F	Focus Test								140/50

Spectr. Temp. 58°F ..... Dome Temp./Hum. 53°F/59% Transparency Conditions ..... clear WITH SOME CLOUDS

Focus set 387 136

Spectr. Temp. 50°F ..... Dome Temp./Hum. 46°F / 59% .....

Exp. Mtr. UG FILTER	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1200/50.7	BS	IIaO-e	4		58° F set F = 387	
9002	~~poor~~ poor	2.2	F2	BC	1200/50.7	BS	IIaO-e	4	KK Asm Sp	numbered '4' on plate	fine
9049	poor	2.2	F2	BC	1200/50.7	BS	IIaO-e	4	KK Asm Sp		fine
20010 20006		3.93	F0p	BC	1200/50.7	BS	IIIaJ-efg	4	KK Asm Sp.		OK
							IIaO-E				V V
3750 3768	O.K.	6.55	dG5	BC	1200/507	BS	IIaO-E	4	KK Asm Sp.	SOME CLOUDS 56°F (spect. temp.) leave focus	OK
							IIIaJ efg				V
35008	O.K.	2.2	A5III	BC	1200/507	BS	IIIaJ efg	4	KK Asm Sp.	Sp. T = 53° leave focus	
40018	O.K.	3.68	F0IV	BC	1200/50.7	BS	IIIaJ efg	4	KK Asm Sp.		fine
							IIaO E	APRIL	16		V - V
39517	O.K.	3.93	K2III	BC	1200/50.7	BS	IIIaJ efg	4	Rad. Vel. Std.		fine
40017	O.K.	V = 3.78	F5IV	BC	1200/507	BS	IIIaJefg*	4	KK Asm Sp	T = 51° F ⇒ set F = 388	fogged but OK exp combo V's/Blue
				"	"	"	IIaO-e	4			

* Note # 50012 cannot be used with this spot because it ended up developed slightly fogged at later date.

137 Wed.-Thurs.

Date June 10-11/87 Observers Lgt-Ri-KK

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50013	HD 124897	14 11.1	+19°42'	20:50		0h 24m E		Th-A	10 sec .1 10 sec .31
50014	HD 112185	12h 49m 38s	+56° 30'	21:16	21:22	1h 26m W	+56° 13'	"	10 sec .1 10 sec .3
50015	HD 8890	1h 22.6m	+ 88° 46'	2148	2155	0h 27m W	+89° 23'	Fe Ne clear	90 90
50016	"	"	"	2200	2205	11h 24m E	"	"	90 90
50017	HD 144287	16h 0.0m	+25° 30'	2219	0219	3h 11m W	25° 28'	"	60 60 60
50017T	SPOT CAL FOR PLATES 50015-17				15 MIN @ 15 VOLTS			① D4 ② D3 3900 4300	① .02 480
50017F	Focus 9ERT							Fe Ne CLEAR	140 50

Spectr. Temp. 63°F ..... Dome Temp./Hum. 60°F/47% Transparency Conditions ..... clear, some haze .....

Focus 385 138

Spectr. Temp. ...60°F..... Dome Temp./Hum. 56°F/66%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
161 1300 V	2"-3"	1.19	IC2 III$_p$	Echelle	1200/.325	50 (.285)$_M$	IIaO-e	I.T.	Echelle tests	60°F F = .143	fine
100 1300 V	"	1.78	AO IV$_p$	"	"	"	"	"	"		sl str.
9105	2"	2.2	F2	BC	1200/50.7	BS	IIaO-e	4	KK Asm-Sp.		fine
9145	2"	2.2	F2	BC	1200/50.7	BS	IIaO-e	4	"		"
3940 2805	2"	7.62	G8V	BC	1200/50.7	BS	IIaO-e	4	"	clouds during last part of exposure	sl wk
							IIaO-E				Venton Blue
					1200/50.7	B.S.	IIaO-E	4		T=60°F F=385	" "
										clouded in	

V 139 Sun - Mon

Date June 14-15, 87 Observers JH

Emulsion Batches:
4¾ 90 IIIa-J-efg ..... June 2
IIa-O-e ..... June 10

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50018	HD 137909	15 23.7	+29 27	21 16	02 11	0004E	+2919	FeNe Clear	90 90 90
50018T	Spot Calib for 50018, 22, 24 + (next night)				15 min @ D4 3900	17 Feb	15V 4300	15V 4810	
50019	HD 158633	17 25.3	+67 24	22 20	23 49	00 24 E	+6729	FeNe Clear	60 60 60
50020	HD 8890	01 22.6	+88 46	00 03	00 07	0906 E	+8921	n	90 90
50021	"	"	"	00 13	00 21	0852 E	n	n	90 90
50021T	Spot Calib	For 50019-21, 50023 + (next night)			5 min @ 15V		D4 D3 3900 4300	D2 4810	
50022	HD 159561	17 30.3	+12 38	00 33	00 47	0 27 W	+12 44	FeNe Clear	90 90 90
50023	HD 161096	17 38.5	+4 37	00 55	01 06	0 38 W	+4 44	n	90 90
50024	HD 170200	18 23.1	+06 08	01 13	03 33	2 22W	+6 21	"	90 90 90
50024F	Focus test					0 0	+6 20	FeNe Clear	140 50

Spectr. Temp. 80°f ..... Dome Temp./Hum. 77°f / 60% Transparency Conditions sl. cloudy .....

Focus 383 140

Spectr. Temp. 73°f ..... Dome Temp./Hum. 67°f / 76%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
18,500											*
12,550	ok	3.93	F0p	BC	1200/507	BS	IIIaJ-efg	4	Asm Sp-kk		fine
							IIIaJ-efg				fog?
3480											
3075	ok	3.09	gK1	BC	1200/507	BS	IIaO-e	4	Asm Sp kk	cloud dead	slwk
2530	ok	2.2	~~F~~	"	"	"	"	4	"		fine
2500	"	"	F	"	"	"	"	4	"	cloud	* fine
							"				uu
2200											*
2570	ok	2.2	A5III	BC	1200/507	BS	IIIaJ-efg	4	Asm Sp kk		fine
1,300	"	3.98	K2III	"	"	"	IIaO-e	4	Std Vel		fine
1,000			B8III								
2,500	ok→poor	5.7	→IV	"	"	"	IIIaJ-efg	4	Ly prog	T=77f getting gusty	~~fine~~ wk
									very slow 2nd half		
				BC	1200/507	BS	IIaO	4		Se 383 T=73°f	sl Blue
										* dust spot @ upper slicer (reverse from recently)	

@ 141 Mon - Tues

Date June 15-16/87 Observers TN KK (some) / TN

Emulsion Batches:

4 3/4 690 II a-J e-g ..... June 2

..... II a-O e ..... June 10

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
KK's	tests of new	3200	ASA color film		on "Pluto"				
			I actually found	Pluto	≈ 22 hrs EST				
50025	HD139892	15 35.6	+36 58	23 14	01 20	2 59 W	+36 49	Fe Ne Clear	90 90 90 90
50026	HD209790	22 00.9	+64 08	01 44	03 14	1 32 E	+64 44	Fe Ne Clear	90 90 90
50027	HD 8890	01 22.6	+86 46	03 26	03 29	5 35 E		"	90
50028	"	"	"	03 33	03 39	5 25 E		"	"
DT 117 Ri	Polaris	31	columns	200	frames				

Spectr. Temp. 73°f ..... Dome Temp./Hum. 70°f / 60% Transparency Conditions ... V. s/ hazy .....

Focus ..... 385 .....

Spectr. Temp. 68°f ..... Dome Temp./Hum. 65 / 75

142

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								Vis Eyepiece Fld		brt star in handbook's Fld	
							(by eyeball)			E	W
Blue filter 15K in 1st hr 15K	ok	5.0	B7V	BC	1200/507	BS	IIIaJ-eq	4	Lyppgm	N Pluto ≈ 8' from Brt star. Tungsten Light in Cage was on for ≈ 5 mins cause on spectrum easily	ok
20K 20,100	fine	4.63	A3m	BC	1200/507	BS	IIIaJ-eq	4	Asm & 15K	nice dbl Like previous	Ok
28000	"	2.2	F	"	"	"	IIIaO-e	4	"		fine
	"	"	"	"	"	"	"	4	"		
	goal					BS			just curious what std should be like		

143 Tues Wed

Date June 16-17.87 Observers Tn

Emulsion Batches:
IIIa-efg ..... June 2
IIa-e ..... June 10
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50029	HD 139892	15 35.6	+36 58	20 41	23 51	01 36 W	+36 52	FeNe Clear	90 90 90
50029T	Spot Cal'n for 50029	-30	+50 36	(next night)	15 min @ 04	17.5V 3900	15V 4300	15V 4810	
50030	HD 139892	15 35.6	+36 58	23 56	02 22	04 04 W	+36 51	FeNe Clear	90 90 90
~~50031~~	~~HD 8890~~								
50031	HD 8890	01 22.6	+88 46	02 34	02 42	06 22 E		FeNe Clear	90 90
50032	"	"	"	02 46	02 51	06 13 E		"	"
50033	HD 217675	22 57.3	+41 47	03 01	03 14	02 25 E		"	90 90
50034	HD 222368	23 34.8	+5 05	03 22	03 46	02 30 E	+5 44	"	90 90
50034F	Focus test					0 0	11	"	150 50

Spectr. Temp. ...75°f..... Dome Temp./Hum. 73°f / 60% Transparency Conditions some cloud.....

Focus 385 - 386.....

Spectr. Temp. ....65°f..... Dome Temp./Hum. 65°f / 90%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7800 22,700	Fine	5.00	B7V	BC	1200/50.7	BS	IIIaJ-efg	4	Lyppgm	but too cloudy	
Note - bulk of this exp obtained in last hour											
							IIIaJ-efg			Satellite thru fld @ 23 55	vv
12,000 17,700	Fine ↓ poor	5.00	B7V	BC	1200/507	BS	IIaJ-efg	4	Lyppgm	seeing going, but clear for a change	
								+ mild oscillation in wind. I can't win on this star.			
8,100 ≈ vem 8000	ok	2.2	F	BC	1200/507	BS	IIaD-e	4	Hsm Sp tk		fine
		"	"	"	"	"	"	4	"	Set 386 T=68°f	fine
9010	ok	3.6	B6p	"	"	"	"	4	"		ok
5000	poor	4.64	F7V	"	"	"	"	4	stdvel		s/wk
				"	"	"	IIaD	4		T=65°f Set 386	ok
≤ stellar may be wk - (Decker or BS problems?)											
							IIaDs	go	with Spot Calls of June 4/15		
						KK - Only 1			IIIaJ strip in dome		
P.S. Are old IIIaJ's in vacuum OK? There are recent uses of them?									(no 4x5 for it)		

145 Wed-Thurs

Date June 17-18/87 Observers T.a

$8^m 68^o$ Emulsion Batches:
$5^m 69^o$ Tabe 3Ta June10
Tal-efg June2
Tabe 3Ta June16

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50035F	Focus test			20 20		0 0	+36 30	Fe/Ne clear	1 50 50 inf
DT 118R1	HD 136202	15 14.2	+2 09	20 40 51	20 49 03	01 03 E	+1 59	200 frames	X 0
118A1									
50035	HD 136202	15 14.2	+2 09	20 55	21 17	00 35 E	+1 59	Fe Ne clear	90 90
50036	HD 139892	15 35.6	+36 58	21 23	22 09	00 06 E	+36 49	"	90 90 90
50037	HD 158633	17 25.3	+67 24	22 16	23 39	00 22 E	+67 28	"	60 60 60
Fm 32R1	NGC 6543	17 58.8 (1950)	+66 38				+66 47	Dy	
33	"			Saved for visitors etc (very opportune seeing)					
34	"	high contrast					Prob < 1" well ??		
35	"	"	"						
50038	HD 8890	01 22.6	+88 46	00 37	00 43	08 18 E	+89 21	Fe Ne Clear	90 90
50039	"	"	"	00 50	00 56	08 05 E	"	"	40 90
50040	HD 195987	20 29.4	+41 32	01 12	03 44	00 38 W	+42 01	"	60 60 60
50040	T Spot Cal'n for 50035, 37, 40.				15 min @ 15V	D4 3900	D3 4300	D2 4810	
				(very precise guiding; focus maximizing w/on highest contrast		5 10 mg ea	int i@(x 141)		

Spectr. Temp. 72°f ..... Dome Temp./Hum 68°f / 50% Transparency Conditions Fine .....

Focus ... 3.86 .....

Spectr. Temp. 65°f ..... Dome Temp./Hum. 60°f / 62% 146

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2339 2055				BC	1200/507	BS	098	4	Decker coupler fixed? between Now	No focus change or tilt change since last night.	Can't see
0:1 finder in Blue filter	OK	5.6	F8		-	BS	7 columns 9 on fp		a stdvel	90sec period but flat	OK
7,500	fine	5.6	F8	BC	1200/507	BS	IIIa0-e	4	stdvel		fine
19,995 20 000	"	5.0	B7V	"	"	"	IIIaJ-efg	4	Lg pgm	Use previous nights Spot Calc	
7070 7020	" fine	7.09	dK1	"	"	"	IIIaO-efg	4	Asm Sp kk		fine
	"									Anice Planetary Nebula	
	"	Looks like a spiral galaxy								time. This shot a guy with a 85 in center time.	
	"									Looks like a car (or maybe	
	"									(Negative looks better) God?	
8040	OK	2.2	F	BC	1200/507	BS	IIIaO-e*	4	Asm Sp kk	T=69°f (Calc no. tonight)	fine
8200	"	"	"	"	"	"	"	4	"		fine
3400 3300	fine	7.82	G9V	"	"	"	IIIaO-e	4	"		slit
							IIaO-e				"
is elbow TV.)							Br 7 star like		moving NE past Vega @ 2 35 EST		

147 Thurs - Fri

Date June 18-19/87 Observers T.T

Emulsion Batches:
IIa-E 3TJ June 16

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
50041	HD 136202	15 14.2	+2 09	20 42	21 12	0 37 E	+1 59	Fe Ne clear	4c 90
50042	HD 147379	16 0.0	+25 05 30	21 21	0 0 22	1 48 W	+25 27	"	60 60 60
50043T	Spot Calc for 50041	-44		*	15 min e	15W D4 3900	D3 4300	D2 4810	
50043	HD 8890	01 22.6	+88 46	00 35	00 37	8 20 E	+89 20	Fe Ne clear	90 90
50044	"	"	"	00 43	00 46	8 29 E	"	"	90 90

Spectr. Temp. 73°F ..... Dome Temp./Hum. 74°F / 48% Transparency Conditions . sl. Cloudy .....

Focus ... 386 .....

Spectr. Temp. 68°F ..... Dome Temp./Hum. 63° / 60%

148

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7300	fine	5.6	F8	BC	120/150.7	BS	IIa0-e	4	stellar		fine
3500 3500	"	7.62	G8V	"	"	BS	"	4	asm Sp tk	some cloud	s'cut
* +	500	38	39	(Previous	Pig/1+)		"				vv
8000		7.7	F	BC	120/150.7	BS	"	4	Asm Sp tk		fine
8000		"	"	"	"	"	"	4	"		fine

149 Tues-Wed

Date June 23-24 1987 Observers K.K.-T.a

8" 67° Emulsion Batches: ...IIa-O...E...375... June 16

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
~~50045 F~~	~~Focus test~~			20 35		E	+2°	FeNe Clear	180
50045	HD 136202	15 14.2	+2 09	20 50	21 23	00 06 E	+1 58	Fe Ne Clear	90 90
35mm Camera	Pallas			2146		1 sec 0.9 15 sec "	+25 32		
"	M92								
"	NGC 6543								
For 00038 Tn	NGC 6503	1750.0 (1987.6)	+70 10	~2330			+70		
50046	HD 8890	01 22.6	+88 46	00 04	00 10	8 27 E	+8920	Fe Ne Clear	90 90
50047	"	"	"	00 29	00 35	8 02 E	"	"	90 10
50048	HD 217675	22 57.5	+41 47	00 59	01 09	4 02 E	+4223	"	90 90
50049	HD 219080	23 08.0	+48 51	0127	01 49	3 33 E	+4929	"	90 90
50049 T	Spot Calc	for 50045-52			15 min @ 15V	04 3900	03 4300	02 4810	
50050	HD 217782	22 58.0	+42 13	01 56	02 34	2 38 E	+4250	Fe Ne Clear	90 90
50051	HD 196524	20 32.9	+14 15	02 45	02 59	0 13 W	+1443	"	90 90
50057	HD 206901	21 40.1	+25 11	03 07	03 33	0 23 E	+2544	"	90 90

Spectr. Temp. ..76°f..... Dome Temp./Hum. +75°f/60% Transparency Conditions .... fine...getting hazy.....

Focus ...384..... 150

Spectr. Temp. ..77°f..... Dome Temp./Hum. +66°f/82%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
No 90				BC	1200/507	BS	IIaO-e	4		Hartmann mask not Running correctly	
109	OK	5.6		"	"	"	IIaO-e	4	stalvel		slwk
Also Fm 000037 81?					159 x 159	pixels			300 frames	(NGC 6503) Large faint galaxy	
8160	~~Poor~~	2.7	F7	BC	1200/50.7	BS	IIaO-e	4	Asm Sp		fine
900	"	"	"	"	"	"	"	4	"	T = 74°f	fine
7,420	"	3.6	B6p	"	"	"	"	4	"		ok
8680	"	4.9	F0IV	"	"	"	"	4	"		slwk
							"				v
8660	poor	5.7	A2	BC	1200/507	BS	"	4	Asm Sp Hk	73°f	slwk
8746	Fair to poor	~~4~~ 4	F5IV	"	"	"	"	4	"		v slwk
8650	"	4.4	F5IV	"	"	"	"	4	"		v slwk
			*	Hk	Last of	cut	IIaO -		Thought there was more, but couldn't find any.		

151

Wed - Thurs

Date . June 24-25/87 .. Observers ... TM .....

Maj-efg @ 68° 5 mins

Emulsion Batches:

... IIaJ-efg ... 2A6 ... June 23

8m 67° ... IIaO-e ... 1A7 ... June 23

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50053F	Focus test					0 0	+4°	FeNe Clear	140 60
50053	HD 139892	15 35.6	+36 58	20 47	21 54	00 08W	+36 47	n	90 90 90
50054	HD137909	15 23.7	+29 27	21 59	22 28	00 54W	+29 16	n	90 90 90
50054T	Spot Calib for	50053-57			15 mins	D4 3900 17.5V	15V 4300	15V 4810	
50055	HD 139892	15 35.6	+36 58	22 33	23 38	01 52W		FeNe Clear	90 90 90
50056	n	n	n	23 42	00 54	0308W	+3648	n	90 90 90
50057	HD170200	18 23.1	+06 08	01 02	0327	0254W	+6 18	n	90 90 90
50058	HD 222368	23 348	+05 05	03 32	0357	0148 E	+5 41	n	90 90

Spectr. Temp. ..80°f.....25°c Dome Temp./Hum. 80°f../.65% Transparency Conditions ..hazy.....slightly.....

Focus ... 3.83.....

Spectr. Temp. ..75°f..... Dome Temp./Hum. 72°f../.80%

New IIaO batch

152

Exp. Mtr. / Comparator Filter Exp.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1200/507	BS	098 test	4	in IIaO box	Hartmann mask would stay home on its own after	center v vs/Red
20008 19900	fine	5:00	B7V	"	"	"	IIIaJ-Eg	4	Ly pgm		
18053 18012	"	3.93	F0p	"	"	"	"	4	HsmSp HK		OK v
							"				
19994 19700	OK	5:00	B7V	BC	1200/507	BS	"	4	Ly pgm		
14090 18300	"	"	"	"	"	"	"	4	"	78°f 24°c.	
12650 18400	OK→ so so	5.7	BSIII	"	"	"	"	4	"	some haze better Testbank	
17530	so so	4.64	F7V	"	"	"	IIIaO-e	4	stdvel		vs/wk
						Note, extra IIIaJ plate is slightly fogged missing #5001Z - stayed stuck in box)					

153 Wed-Thurs Percy Tour

Date JULY 8-9/87 Observers Jn

Emulsion Batches:
No. 147 30 May
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Looked @	Ring Nebula with CCD for Large Tour							
								# Frames	
DT000		19875							
119	~~HD~~ 740 ph	18202	+3 22	22 4550	~~22~~ 22 53	0 38E	+3 31	200	X0
120	"	"	"	22 5734	23 0440	0 26 E	"	200	x0
120 ANH									
	July 9								
50058T	Flex test	$4^h \rightarrow 0^h$ + 35°						Tu F	5s
	after rebuilding camera mirror mount								

Spectr. Te
Focus...
Spectr. T
Exp. Mtr.
Gear Pos
S: 4
T: Not Level

Spectr. Temp. ..... Dome Temp./Hum. +80°F / 92% Transparency Conditions ... Slhazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 70°F / 95%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Gear Pointed								nfp	#columns		
5:4	ok	V= 4.86	G8III	.96 pix		BS		7	63	Analysis shows 90sec still	
-1 Just Leaving	8.50	"	"	.66 pix		"		7	63		
										Looks better than 119 AM	
				Echelle	13mm/ .325	30µ 35µ	IIaDe	1		F = .340	

155 Sun-Man #1

Emulsion Batches: IIaO-e ... IA7 - Jun 23

Date July 12-13/87 ... Observers T.H

Plate No.	Object	R.A. 1900 (1987.5)	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
DT000 121 Tn	74 Oph	18 20.2	+3 22	20 42 46	≈20 50	2 26 E	+3 32	II Frame 200	Jn7 x0
121 An#									
122 Tn	"	"	"	20 54 14	21 1535	2 00 E		600 ~~300~~*	x0
122 An#									
123 Tn	"	"	"	21 1850	21 25 55	1 50 E		200	x0
123 An#									
124 Tn	"			21 28 46	21 57 17	1 19 E		800	x0
124 An#									
50059	HD 8890	1900 01 22.6	+88 46	22 28	22 32	8 53 E	+89 17	FeNe Clear	≈90 90
50060	"	"	"	22 39	22 45	8 40 E	"	"	90 90
50060 T	Spot Calib for 50059 - 64 (next night)				15 min @ 15V		D4 3900 D3 4300	D2 4810	
DJ000 125 Tn	HD 187691	19 46.2	+10 10	22 57 31	≈23 04 37	1 44 E	+10 31	200	x0
125 An#									
50061	HD 187691	19 46.2	+10 10	23 09	23 48	0 59 E		FeNe Clear	90 90
DT000 126 Tn	"	"	"	23 51 05	00 19 37	0 26 E		800	x0

Spectr. Temp. ..85°f..... Dome Temp./Hum. 85°F/..73%... Transparency Conditions ..s.l hazy.....

Focus ....3.83.....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

156

Exp. Mtr. worm gear	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. nfp	Program	Remarks	Quality
r:2 well in	Fine	v= 486	(Rack centered @ 19800)			BS		~~7~~	# columns 63	~~not b~~	
								7		not bad but some 90sec	
r:9 just starting to leave worm			G8III	(* image moving too far right in box)					63	some noise down middle of Box (heat no doubt)	
								7			
N6 well in									63		
								7			
W:7 well in	Fine								63		
Blue filter								~~7~~ 6		* it didn't like nfp=7 or 9	
5438	OK	2.2	F2	BC	1200/507	BS	IIa0-e	4	Asm Sp kh	Must be noise effect	Fine
5550	"	"	F2	"	"	"	"	4	"		fine
							"			✓ Some cloud	v. v
X:2 well in	OK	5.7	F8V			BS	"	~~7~~ 6	std vel 63	some noise still ie vertical through mid box	
								7		steep	
5064	OK	5.7	F8V	BC	1200/507	BS	IIa0e		std vel		
Z2 in worm	OK	"	"			"			63		

157 #2

Date July 12-13 ..cont... Observers ..J.a.....

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
DT000126Ah#	HD 187691	19 46.2	+10 10						
50061F	Focus test					0 26E	+10 31	FeNe clear	150 50

Spectr. Te
Focus...
Spectr. T

Exp Mtr.
1900
1807

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus ... 383 .....

158

Spectr. Temp. ... 82.5°F ..... Dome Temp./Hum. 78°F / 88%

Comparison Filter	Comparison Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										npf-7			
	150	1900											
	50	1800				BC	1200/50-7	BS	[illegible]	4			OK

159 Thurs Fri

IIaO-e @68°F July 19
IIIaJ @ 68°F July 23

Date July 16-17/87 Observers ....Tg.....

Emulsion Batches:
IIaO-e ... 147 ... June 23
IIIaJ-cfs 245 ... June 23

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50062F	Focus Test			20 50		03 38 E	+10° 30	FeNe clear	150 50
DT 127oTn	HD187691	19 462	+10 10	21 0054	21 08	03 20 E	"	# Fmass 200	int x0
128iTn	"	"	"	21 1206	21 1910	0309E	"	"	"
129JTn	"	"	"	21 2425	21 4549	0245E		600	"
50062	HD187691	"	"	21 49	2209	0222E	+10 30	FeNe clear	90 90
DT 130oTn	"	"	"	22 1210	22 2000	0211 E	"	200	
50063	HD 8890	01 22.6	+88 46	2231	22 35	0832E	+89 17	FeNe clear	90 90
50064	"	"	"	22 42	2246	0820E	"	"	90 90
50065	HD 209790	22 00.9	+64 08	23 01	2323	0221 E	+64 40	"	110 110 110
50066	HD 182640	19 20.5	+2 55	00 33	0101	0058 W	+3 13	"	150 150
50066T	Spot Calib For	49	50065-66		15 min @ D4	17.5V 3900	150 4300	15V 4810	

Spectr. Te
Focus...
Spectr. T

Exp Mir Blue Filt
2247
3200
B 3 in
C1 in
C 8 in
5500
DC in
5463
2:1000
3:0960 3:1000
37000

Spectr. Temp. ..70°f..... Dome Temp./Hum. .67°/49% Transparency Conditions .some cloud.....

Focus ..3.85..... 160

Spectr. Temp. ..67°f..... Dome Temp./Hum. .60°/75%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
~~2247~~ 2200				BC	1200/507	BS	IIaO-e	4			OK
B: 3 in	Fine					BS		npf 7	63 columns	+ AN# OK on Analysis	
-1 in						"		7	"	cloud (some) Looks OK	
.8 in	Sxso					"		7	"	very odd on Analysis all clear	
5500	ok	3.7	F8V	BC	1200/507	"	IIaO-e	4	std vel		
00 in									Disk	Normal looking analysis Full again ∴ ~~not~~ AN# not saved	
8463	ok	2.2	F2	BC	1200/507	BS	IIaO-e	4	Asm Sp KK		OK
11000	"	"	"	"	"	"	"	4	"		OK
20096 24000	ok	4.63	A3m	"	"	"	IIIaJ-eg	4	"		fine
37000	poor ~~Sxso~~	3.68	F0IV	"	"	"	IIIaJ-eg	4	"		fine
							IIIaJ-eg				~~rv~~
			Note	IIaO's in previous night.					Exp box	~~***~~ with spot Col'n of same night.	
			KK	- I copied some early DT files to 2 floppies, labelled in my floppy box & deleted same from disk to give room for more DT's.			Ta				

161 Mon-Tues IIaO Dec 68° July 23

Date July 20-21 '87 Observers Tn - Hdy

Emulsion Batches:
IIaO-e 147 - June 23
IIIa-F-Cg 245 - June 23

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50066F	Focus test			20 15		1 47 E	+3 41	FeNe Clear	150 50
50067	HD 8890	01 22 6	+88 46	23 14	23 19	7 28 E	+89 18	"	90 90
50068	"	"	"	23 21	23 35	7 12 E	"	"	90 96
50068T	Spot Calib	for 50067-68			15 min @ 15V	D4 3900	D3 4300	D2 4810	
50069	HD 209790	22 00 9	+64 08	23 44	00 47	1 43 E	+64 41	FeNe Clear	110 110 110

Spectr. Te
Focus ... 3
Spectr. T

Exp. Mtr.
Blue Gl

1850
1706
8210
8222

13400
1055

Spectr. Temp. ..80°f..... Dome Temp./Hum. 80°f / 60% Transparency Conditions .. some cloud.....

Focus .. 382..... 162

Spectr. Temp. ..78°f..... Dome Temp./Hum. 80°f / 60%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1850											
1706				BS	1200/507	BS	IIaO-e	4			OK
8210	soso	27	F2	"	"	"	"	4	Asm Spark	what dispersion? →	wk
8222				"	"	"	"	4	"	→	wk
							"				"
13400	soso	A63	A3m	BS	1200/507	BS	IIIaF-eg	4	Asm Sp Ht	cloud	fog
1055											wk

163 Tues-Wed

Date July 21-22. 1887 Observers Hdg-Tn

Zalocosy day July 23
5 min @ 687

Emulsion Batches:
Hal-e 147 June 20
Mas-e 245 June 23

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
50070F	Focus test			20 13		0 0	+35 15	FoNe clear	180 60
50070	HD 161096	17 38.5	+4 37	20 29	20 41	1 24 E	+4 42	4	90 90
50071	HD 159561	17 30.3	+12 38	20 52	21 05	0 50 E	+12 43	4	150 150
50071T	Spot Calib	for 50071 +50069 (previous night) 15 min @ D4						175V 15V 15V 3900 4300 4810	
50072	HD 158633	17 25.3	+67 24	21 15	23 43	1 58 W	+67 26	FoNe clear	70 70
50073	HD 8890	01 22.6	+88 46	23 58	00 04	6 45 E	+89 18	n	100 100
50074	"	"	"	00 13	00 19	6 30 E	"	n	100 100
50075	HD 209790	22 00.9	+64 08	00 29	01 48	0 36 E	+64 41	n	100 100
50074T	Spot Calib	for 50070, 50072–74, 50077, 78.						15 min @ 15V D4 3900 D3 4300 D2 4800	
50076	HD 217675	22 57.3	+41 47	01 59	02 44	0 37 E	+42 23	FoNe Clear	100 100
50077	HD 217782	22 58.0	+42 13	02 52	03 28	0 06 W	+42 48	n	100 100
50078	HD 219080	23 08.0	+48 51	03 36	04 12	0 43 W	+49 27	n	100 100

June 22
June 23

Spectr. Temp. 83°f ... 28°C Dome Temp./Hum. +85°f/60% Transparency Conditions Sl. Cloudy ... 164 ...

Focus ... 3.82 ...

Spectr. Temp. ~~74°f~~ ... Dome Temp./Hum. 70°f/88%

CCD still too noisy for Drive Tests
Also too difficult to focus or estimate seeing

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2300 2006				BC	1200/507	BS	IIaO-e	4			OK
7434	OK	4	K2III	"	"	"	"	4	std vel		
36378	"	2.2	A5III	"	"	"	IIIaJ-efg	4	Asm Sp kk		OK *
+ Spot for 50075-76 + 50079 (next night)							IIIaJ-efg				✓✓
3586 3599	soso	7.09	dK1	BC	1200/507	BS	IIaO-e	4	Asm Sp kk		fine
8093	—	2.2	F2	"	"	"	"	4	"	T = 78°f 25°C	"
≈8000	—	"	"	"	"	"	"	4	"		"
19724 19286	—	4.63	A3m	"	"	"	IIIaJ-efg	4	"		OK *
~~19234~~	+ 50080-84 (next night)						IIaO-e				✓
18012 17705	—	3.6	B6p	BC	1200/507	BS	IIIaJ-efg	4	Asm Sp kk	cloud	* OK
8485	—	5.17	A2	"	"	"	IIaO-e	4	"		OK
9088	—	4.90	F0IV	"	"	"	"	4	"		OK

* Some emulsion fog

165 Wed-Thurs

IIa0 Dev July 23 @ 68°f

Emulsion Batches:
IIa-d-efg 2A5 – June 23
IIa-D-C NA7 – June 20

Date July 22-23/87 Observers Hdg-Tm

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
50079F	Focus test			20 20		0 0	+2916	Katie clear	180 60
50079	HD137909	15 23.7	+29 27	20 33	20 56	1 12 W	"	"	150 150
50080	HD 144287	16 00.0	+25 30	21 04	23 33	3 13 W	+2524	"	70 70 70
50081	HD 195987	20 29.4	+41 32	23 40	03 11	2 23 W	+4200	"	70 70 70
50082	HD 8890	01 22.6	+88 46	03 22	03 28	3 24 E	+8918	"	90 90
50083	"	"	"	03 35	03 42	3 10 E	"	"	90 90
50084	HD222368	23 348	+5 05	03 52	04 20	025 W	+540	"	90

Spectr. Temp. 83°f ..... Dome Temp./Hum. 82°f / 57% Transparency Conditions some Cirrus 166

Focus ... 3.82 .....

Spectr. Temp. 78°f ..... Dome Temp./Hum. 76°f / 80%

A few Brt meteors, slow ε N→S
I saw one N S one last night too, Ta
spike Junk 77 Ta

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2000 ±				BC	1200/50.7	BS	IIaOe	4			
37990	OK	3.93	FOp	"	"	"	IIIaJ-eg	4	Asm Sp-kt		a fog OK exp
3336 3270	OK	7.62	G8V	"	"	"	IIaO-e	4	"		
3493 3482	Fine	7.82	G9V	"	"	"	"	4	"		
8092	OK	2.2	F2	"	"	"	"	4	"		
7993	"	"	"	"	"	"	"	4	"		
4107	poor	4.64	F7V	"	"	"	"	4	stdVe/		

IIaOs put in previous night's
Exp box for IIaO.

167 Sun Mon

Date ..July 26-27/87.. Observers ..J.m.-tk.....

Emulsion Batches:
..103aF-ref g...1A7...July 23
...103a-E....1A7...June 20
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
OT000 131 Jm	HD 137909	15 23.7	+29 27	20 24 41	20 31 48	01 03 W	+29 16		
50085	"	"	"	20 34	21 17	01 48 W	"	Fe Ne Clear	150 150
50086	HP 139897	15 35.6	+36 58	21 24.	22 48	03 09 W	+36 49	"	100, 100
50086T	Spot Calib for	50085-86+ 50092 50091 (next night)		15 min @ 04	17.5V 3900	15V 4300	15V 4810		
Direct Phot	Ring Nebula	1987 18 53		23 15		1 min, 6 min			
50087	HD 8890	01 22.6	+88 46	00 12	00 15	~6 35 E	+89 17	Fe Ne Clear	100 100
50088	"	"	"	00 27	00 30	~6 20 E	"	"	100 100
50089	HD 222368	23 34.8	+05 05	00 42	00 58	2 40 E	+5 40	"	100 100
50089F	Focus test			01 02	01 07	02 40 E	"	"	180 60

Spectr. Temp. 78°F ..... Dome Temp./Hum. 70°F / 78% Transparency Conditions ... Sl. Hazy ... OK though ...

Focus ... 383 .....

Spectr. Temp. 69.5°F ..... Dome Temp./Hum. 66°F / 80%

168

FD1000038. Tn 101,716 Jy/px

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
47 leaving posn	OK	3.93	FOp	BC	1200/50.1	BS	I		63 columns	AM# 13.AM ADF=7	
Blue filter 30,000	so so OK	4	"	"	"	"	IIIa J-eg	4	Asm Sp-kt	1" broken off end	OK
9000 8100	5080	5.00	B7V	"	"	"	"	4	SB-Ly	RA oscillation @ end severe	fingerprints OK
							"				"
61 Cygni also photographed by kt (Snyder) ✓											
8000	OK	2.7	F2	BC	1200/507	BS	IIaO-e	4	Asm Sp		Fine
8084	OK	"	"	"	"	"	"	"	"		"
7000	very poor	4.64	F7V	"	"	"	"	4	st.level		fine
2500				"	"	"	"	4		Still set @ 383 T=69.5°F	v.sl blue

169

Mon - Tues

Date July 27-28/87 Observers T.n (date-com time w/in 6m & 60s)

Emulsion Batches:
IIaD-e 1A7 – July 23
IIIaJ-~~cG~~ 1A7 – July 23

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50090F	Focus test			20 05		0 0	+2642	TeNe 180 Clear 60	~~Fe Ne~~ Clear
DT000132 Jn	HD161096	17 38.5	+4 37	20 25 32	20 32 38	01 07 E	+4 39	200 Fring	X0
50090	"	"	"	20 36	20 45	00 55 E	"	FeNe Clear	100 100
50091	HD139892	15 35.6	+36 58	20 53	21 57	02 20 W	+36 47	"	100 100
50092	"	"	"	22 02	23 25	03 51 W	"	"	100 100
50093	HD195987	20 29.4	+41 32	00 05	02 47	02 18 W	+41 58	"	70 70 70
50094	HD219080	23 08.0	+48 51	02 55	03 09	00 02 W	+49 26	"	110 110
50095	HD8890	01 22.6	+88 46	03 25	03 29	02 56 E	+89 18	"	110 110
50096	"	"	"	03 36	03 40	02 45 E	"	"	110 110

Spectr. Temp. 75.5°f ..... Dome Temp./Hum. 73°f / 55% Transparency Conditions Fine 170

Focus ... 383 - 384 .....

Spectr. Temp. 67°f ..... Dome Temp./Hum. 62°f / 85%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2580				BC	1200/50.7	BS	IIaO	4			
2400 ~ worm/poss											vsl blue
m:8 in	Fine	3.93	K2III	"	"	"			63 columns	npf=7 : AN# smooth/periodic	
7180	"	"	"	"	"	BS	IIaDe	4	Std Vel		fine
20012											for
20053	"	5.00	B7V	"	"	"	IIaJ-Eg	4	SB Lg		fine
8000										severe RA osc; lots o 2 40W	sl fog
30000	ok	"	"	"	"	"	"	4	"	Set 384 T=73°f	ok
3000	1-1"	7.82	G9V	"	"	"	IIaO-e	4	Asm Sp KK	some cloud	
2990											vsl wk
8900	2"-3"	4.90	F0IV	"	"	"	"	4	"		OK
~8200	5"	2.2	F2	"	"	"	"	4	"		fine
8220	5	"	"	"	"	"	"	4	"		fine

171 Tues-Wed

Date JULY 28-29/87 Observers ...M.....

Emulsion Batches:
...IIaO-e..1.H.7...JULY 23
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50097	HD 158633	17 25.3	+67 24	21 33	23 11	01 63 W	+67 25	FeNe clear	90 90 90
50097T	Spot CuK for	50097-99	+50090-96	(Previous night)	15 min @	15V	D4 3900	D3 4300	D2 4810
50098	HD 8890	01 22.6	+88 46	2327	23 33	0647E	+89 16	FeNe clear	110 110
50099	"	"	"	2342	2345	0635E	"	"	110 110

Spectr. Ter
Focus ...
Spectr. Ter

Exc Mir
Exc Slit

3:57
3:54

8:65

8:77

Spectr. Temp. 72°F 22°C Dome Temp./Hum. 65°F / 55% Transparency Conditions ... Fine ... cloudy ...

Focus ... 3.84 ... unchanged from last night

Spectr. Temp. 68°F 20°C Dome Temp./Hum. 60°F / 75%

Fine Aurora

172

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3157	2-3"	7.09	dK1	BC	1200/50.7	BS	IIaO-e	4	Asm Spkt	some cloud	fine
3154							IIaO-e	Note-	Spot Color referring to Previous or Next night if same means that all are developed together.		"
8165	Ok	2.2	F2	BC	1200/507	BS	"	4	Asm Spkt		fine
8177	poor	"	"	"	"	"	"	4	"	Clouded in	"

173 Thurs - Fri

Date J4y.30-31.187.. Observers .T.G.....

Emulsion Batches: .III-J-cfg..IA7....J4G23

~~Date~~ .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50100	HD137909	15 23.7	+29 27	20 25	21 03	01 52W	+29 16	FeNe Clear	150 150
50101	HD159561	17 30.3	+12 38	21 11	21 28	00 08W	+12 41	n	150 150
50101T	Spot Clk	For 50100 - 50102			15 min @	04 3900 17.5V	4300 15V	4810 150	
50102	HD192640	19 20.5	+2 55	21 34	00 24*	01 18W	+3 12	FeNe Clear	no 110 no
~~50103~~	HD8890		Too (Cloudy)				+		

Spectr. Temp. 78°F ... 25°C Dome Temp./Hum. 74°F .../80% Transparency Conditions Some Cloud

Focus 3.87

Spectr. Temp. 73°F Dome Temp./Hum. 67°F /88%

174

Exp. Mtr. Blue Red	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
34966	1-3" Fine	3.93	FOp	BC	1200/50.7	BS	IIIa-J sky	4	4sm Sp kk	some cloud	OK
37970	ok	22	A5 III	"	"	"	"	4	"	clouding in	"
							"				"
9300+ 4400	2"	3.68	FO II	BC	1200/50.7	BS	I "	4	Asm Sp kk	* Most exp. gained in 1st hour, to cloudy (probe good sky spect)	rev K
										Et 384 T=73°F	

175 Mon - Tues

Date Aug. 17-18/87 Observers R. / Hdy

Emulsion Batches:
IIaO-E 1A7 - Aug 15

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50103	HD 137909	15 23.7	+29 27	20 29	20 33	02"32W	+29°13	Fe/Ne CLEAR	110 110
50104	HD 137107	15 19.1	+30° 39	20:44	21:14	03"15W	+30°26	Fe/Ne CLEAR	90(12.4 90(1200 90(127
50105	HD 158633	17 25.3	+67°24	21:20	22:46	02"46W	+67°24'	Fe/Ne CLEAR	90(119 90(1207 90(1254
50105	SPOT ORC FOR PLATES			50103-	50112	15MIN@	15 DEGS	① 439.003 3900 4800	② D2 40 10
DT00133R1 50106	HD 195987	20 29.4	+41°32	23:07	02:07	03"50 W	+41°56	Fe/Ne CLEAR	90(1205 90(1222 90(1220
DT00134R1	HD 212943	22 22.8	+04 12	02.15	02:21	01"25W	+04°44		
50107	HD 212943	22 22.8	+04 12	02:23	03:12	02"10W	+04°44	Fe Ne CLEAR	90(1201 90(1159 90(1233
50108	HD 219080	23 08.0	+48°51	03:20	03:36	01"50W	+49°25	Fe Ne CLEAR	90(124 90(1258 90(1247
50109	HD 8890	01 22.6	+89 46	03.45	03:51	01"11E	+89°16	Fe/Ne CLEAR	110(147 110(149
50110	HD 8890	01 22.6	+88° 46	03.55	04:00	01"03E	+89°16	Fe Ne CLEAR	110(1472 110(1474
50111	HD 217782	22 58.0	+42° 13	04.07	04:31	02"55W	+42°56	Fe Ne CLEAR	90(1166 90(1178 90(1181
50112	HD 217625	22 57.3	+41°47	04.35	04:44	03"07W	+42°20	Fe Ne CLEAR	110(1430 110
50112F	FOCUS 9 EST			COMPARISON/STELLAR				Fe Ne CLEAR	180(247 60(285

Spectr. Temp. 81°F Dome Temp./Hum. 74°F 74% Transparency Conditions Good 176

Focus 3.81

Spectr. Temp. Dome Temp./Hum. 66°F 95%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6057		3.93	F0p	B.C.	1200/30.7 (5430)	B.S.	IIaO-E	4	Asm Sp HK		fine
4500 4004		6.2	G2V	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	"		fine
4001 2400		7.09	G4V G9V	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	"		fine
							IIaO-E				
3527 3560		7.82	G9V	BC	1200/50.7 (5430)	B.S.	IIaO-E	4	Asm Sp HK	DRIVE TESTS 335 (K	fair fine
										DRIVE TEST GEAR F N	
4006 4033		5.84	K0III-IV	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	STD. VEL	T= 73°F F 383	Fine
4027 4199		4.90	F0II	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	Asm-Sp/HK		vs/wk
8105		2.2	F	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	Asm-Sp/KK		fine
5040		2.2	F	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	Asm-Sp/KK		"
4052 4059		5.17	A2	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	Asm-Sp/KK		vs/wk
8508		3.6	B6p	B.C.	1200/50.7 (5430)	B.S.	IIaO-E	4	Asm-Sp/KK		"
				B.C.	1200/50.7 (5430)	BS	IIaO-E	4		T=70°F F=385	sl. blue

177

5" 68°

Emulsion Batches:
Int. Fe ..IA7-Aug.19....
Int. F ..IA7-Aug.15....

Date WED-THURS. AUG 19-20/97 Observers .Hdy-Ri.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50113F	FOCUS TEST							Fe Ne CLEAR	180(24.9 60(25.5
50113	HD 137909	15 23 7	+29° 27	19 55	20:28	02h 33W	+29° 15	Fe Ne CLEAR	150(21.6 150(22.6
50114	HD 159561	17 30.3	+12° 38	20:39	20:52	00h 50W	+12° 39	Fe Ne CLEAR	150(20.2 150(20.8
DT000135.R1	DRIVE TEST	POSITION "5"		20:59	21:05	00h 56E	+03° 12		
50115	HD 182640	19 20.5	+02° 55	21.05	21:34	00h 17E	+03° 12	Fe Ne CLEAR	110(14.3 110(14.2 110(14.6
50116	HD 188041	19 53.4	-03° 07	21.40	00.32	02h 12W	-03° 03	Fe Ne CLEAR	110(15.6 110(15.2 110(16.9
50116T	SPOT CALL FOR PLATES 50113-117, 50119-120.				15MIN@D4	① 17.5V 3900 ② 15V 4300 ③ 15V 4810			
DT000136.R1	DRIVE TEST	POSITION "V:"		00:33	00.36	02h 16W	-03° 03		
50117	HD 196524	20 32 9	+14° 15	00:44	01.23	02h 20W	+14° 39	Fe Ne CLEAR	110(15.7 110(16.2 110(17.2
50118	HD 202943	22 22.8	+04 12	01:31	02.14	01h 21W	+04 44	Fe Ne CLEAR	90(13.2 90(13.5 90(13.5
50118T	SPOT CALL FOR PLATES 50118, 50121-124.				15MIN@15VOLTS	① D4 3900	② D3 4300	③ D2 4810	
50119	HD 209790	22 009 009	+64° 08	02:21	03.12	02h 42W	+64° 39	Fe Ne CLEAR	110(16.3 110(16.0 110(16.0
50120	HD217675	22 57.3	+41° 47	03:16	03:39	02h 11W	+42° 21	Fe Ne CLEAR	110(15.- 110(15.- 110(15.4
50121	HD 8890	01 22.6	+88 46	03:46	03:52	01h 03E	+89° 18	Fe Ne CLEAR	110(14.9 110(15.0
50122	HD 8890	01 22.6	+88 46	03:55	04:01	00h 54E	+89° 18	Fe Ne CLEAR	110(15.5 110(15.3

Spectr. Temp. ..... Dome Temp./Hum. ~~70°F~~ ... ~~71%~~ Transparency Conditions ... ~~Good~~ ... 178 ...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				B.C.	1200/50.7 5430	B.S	IIaO E	4		q = 75°F F=382	
35020		3.93	F0p	B.C.	1200/50.7 5430	B.S.	IIIaF+f	4	Asm-Sp/kK		fine
35084		2.2	A5III	B.C.	1200/50.7 5430	B.S.	IIIaF+f	4	Asm-Sp/kK		"
17494 17646		3.68	F0III	B.C.	1200/50.7 5430	B.S.	IIIaF+f	4	Asm-Sp/kK		fine
15018 15003		5.85	A5p	B.C.	1200/50.7 5430	B.S.	IIIaF+f	4	Asm-Sp/kK		"
							IIIaF+f	4			"
17525 17503		3.78	F5IV	B.C.	1200/50.7 5430	B.S.	IIIaF+f	4	Asm-Sp/kK	q = 68°F F=384	fine
4019 4005		5.84	kA7III-IV	B.C	1200/50.7 5430	B.S.	IIaO-E	4	SPD VEL		"
							IIaO-E				"
15037 15028		4.63	A3m	B.C.	1200/50.7 5430	B.S	IIIaF+f	4	Asm-Sp/kK		fine
17562 17591		3.6	B6p	B.C.	1200/50.7 5430	B.S	IIIaF+f	4	Asm-Sp/kK	q = 65°F F=385	"
8149		2.2	F	BC	1200/50.7 5430	B.S	IIaO-E	4	Asm-Sp/kK		fine
8305		2.2	F	B.C.	1200/50.7 5430	B.S.	IIaO-E	4	Asm-Sp/kK		"

179

Date Aug. 17-20/87. Cont'd Observers Hdy.-Ri.

Emulsion Batches: 7½" 69° Tech Pan 197 - Aug 15

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50123	HD217782	22 58.0	+42°13	04:07	04:30	03ʰ02W	+42°46	Fe Ne CLEAR	9-12 90/123 90/125
50124	HD219080	23 08.0	+48°51	04:35	04:50	03ʰ11W	+49°26	Fe Ne CLEAR	110/152 110/152
50124F	FOCUS TEST							Fe Ne CLEAR	180 60

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... good ..... 180 ...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .60°F ... 95%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4034 4015		5.17	A2	B.C.	1200/50.7 5430	B.S.	IIaoE	4	Asm-Sp/kK		OK
8023		4.9	F0II	B.C.	1200/50.7 5430	B.S.	IIaO-E	4	Asm-Sp/kK		"
2650 2655				B.C.	1200/50.7 5430	B.S.	IIaO OG2	4		$\varphi = 64°F$ F. 385	rain s/ BKG

KBI

Date THURS. FRI. AUG 20.-21/87 Observers Hdy-Ri

Emulsion Batches:
IIIaF Lot 1A7 - AUG 19.
7½" 69° IIaO-F Lot 1A7 AUG 20.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50125F	FOCUS TEST							Fe Ne CLEAR	180 60
50125	HD 137909	15 23.7	+29° 27	19.48	20:53	03h02w	+29°14	Fe Ne CLEAR	110(16 110(16 110(16
50126	HD 144287	16 0.0	+25° 30'	21:08	23:27	05h09 W	+25°22	Fe Ne CLEAR	90(132 90(140 90(Fe
50127	HD 195987	20 29.4	+41° 32	23:57	03:13	04h18W	+41°57	Fe Ne CLEAR	90(131 90(136 90(143
50127T	SPOT CALN FOR PLATES 50125				15MIN@D4	① 19.5U 390W ② 15U 430W ③ 15U 480W			
50127T1	" " "	" 50126-131			15MIN@D4	① D2 390W ② D3 430W		③ D2 480	
50127F	FOCUS TEST							Fe Ne CLEAR	180 60
50128	HD8890A	01 22.6	+88 46	03:40	03.46	01h05E	89°18'	Fe Ne CLEAR	110(15 110(15
50129	HD8890A	01 22.6	+88° 46	03:49	04:01	00h50E	89°18'	Fe Ne CLEAR	110(15 110(15
50130	HD 6582	01 01.6	+54 26	04:12	04:36	01h06W	+54°57	Fe Ne CLEAR	110(15 110(15
50131	HD 6961	01 05.0	+54°37	04.39	04:50	01h17W	+55°10'	Fe Ne CLEAR	110(15 110(15

Spectr. Temp. ..... Dome Temp./Hum. 67°F 56% Transparency Conditions .. Some clouds 182

Focus .....

Spectr. Temp. 65°F ..... Dome Temp./Hum. 62°F 81%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2605 2710				B.C.	1200/50.7 5430	B.S.	IIaO E	4		T: 71°F F: 383	sl blue
18063 18053		3.93	Fop	B.C.	1200/50.7 5430	B.S.	IIaF+f	4	Asm-Sp/KK	Some clouds	fine
3152 2690		7.62	G8V	B.C.	1200/50.7 5430	B.S.	IIaO-E	4	Asm-Sp/KK		OK
4003 3716		7.82	G9V	B.C.	1200/50.7 5430	B.S	IIaO-E	4	Asm-Sp/KK	BROKEN 2 PIECES CLOUDS	OK
							IIIaF+f				✓
							IIaO E				✓
2751 3465				B.C.	1200/50.7 5430	B.S	IIaO-R	4		T: 65°F F: 383	sl blue
8022		2.2	F	B.C.	1200/50.7 5430	B.S	IIaO-E	4	Asm-Sp/KK	F: 384	OK
8132		2.2	F	B.C.	1200/50.7 5430	B.S.	IIaO-E	4	Asm-Sp/KK	CLOUDS	Fine
8007		5.81	G5V$_p$	B.C.	1200/50.7 5430	B.S.	IIaO-E	4	Asm-Sp/KK	BROKEN 2 PIECES	OK
8050		4.50	A7V	B.C	1200/50.7 5430	B.S	IIaO-E	4	Asm-Sp/KK	BROKEN 2 PIECES	OK

183

Date FRI. SAT. Aug 21-22/87 Observers Hdy-Ri

Emulsion Batches:
7½ 69° II a0 E 1A7 Aug 20
III a-t 1A7 Aug 19

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50132	HD 187691	19 46.2	10° 10	21:49	22:14	00m 07W	+10° 29'	Fe Ne CLEAR	90 90 90
DT8801378	DRIVE TEST	POSITION K-½		22:15	22:19	00m 15W			
50133	HD 182640	19 20.5	+2 55	22:27	23:05	01m 30W	+03°12	Fe Ne CLEAR	110 110 110
50134	HD 196524	20 32.9	+14 15	23:10	23:40	00m 44W	+14°40	Fe Ne CLEAR	110 110 110
DT8801388	DRIVE TEST	POSITION L:		23:40	23:44	00m 51W			
50134T	SPOT CAL FAN	PLATES 50133-34			15MIN @	@ 17.5V 04 39W	@ 15V 4300	@ 15V 4910	
50134F	FOCUS TEST							Fe Ne CLEAR	180 60

Spectr. Temp. ..75°F..... Dome Temp./Hum. ..70°F....75% Transparency Conditions ..SOME CLOUDS.....184...

Focus .....383.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4013					1200/50.7						
4005		5.7	F8 V	B.C.	5430	B.S.	IIaO-E	4	Std UBL		fine
17500					1200/50.7						
17530		3.68	F0 IV	B.C.	5430	B.S.	IIIaF+f	4	Asm-Sp/kK		fine
17530		U=			1200/50.7						
17518		3.79	F5 IV	B.C.	5430	B.S.	IIIaF+f	4	Asm-Sp/kk		fine
							IIIaF+f				~v
2323					1200/50.2						
2427				B.C	5430	B.S.	IIaO-E	4		9=739 F 383	sl blue

185

Date ~~Sat. Mon.~~ Aug 23-24/80 Observers ... KK-Ri .....

Emulsion Batches:

5m 69° ... IIaD a .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50135	HD 137909	15 23.7	+29 27	21:14	21:~~44~~	0407W	+29°14	TH-A	.320 10s .180 10s
50135T	SPOT CALIB FOR PLATES		① 5450 7V D2	②	5450 7V D2	③ 5100	7V D2		
50136	HD 172167	18 33.5	+38 41	21:59	22:09	01h23W	+38°51	TH-A	.320 10s .180 05s
50137	HD 172167	18 33.5	+38 41	22:18	22:25	01h40W		TH-A	.320 05s .180 05s
50138	HD 172167	18 33.5	+38 41	22:32	22:37	01h50W		TH-A	.320 10s .180 10s

Spectr. Temp. ..... Dome Temp./Hum. 58°F..... Transparency Conditions 186

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1300 V											
30		3.93	FOP	ECHELLE	1200/.325	50μ (.285)	IIa D e	I.T.	Akm-Sp/KK	ECHELLE TILT = 1.6/10 COMP .320 .180 STELLAR .250	bad contact = poor focus
		Plate #s 5013 5-138.								F=.850	✓
1000		0.04	AOV	ECHELLE	1200/.325	50μ (.285)	IIa D e	I.T.	Std Wol		
1013		0.04	AOV	"	1200/Aw	50 (.285)	IIa D e	I.T.	"	HS	
440					1200/.250	50μ (.285)	IIa D e	I.T.	"		

187

Date ~~Mon Tues~~ ~~Aug 24-25/87~~ Observers K.K.-R.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50139	HD 137909	15 23.7	+29°27	20:18	20:48	3h14w	+29°14	~~TH-A~~	~~8sec .180~~ 8sec .320
50140	HD 137909	15 23.7	+29°27	20:55	21:25	3h52w	+29°14	TH-A	~~8sec .320~~ 8sec .180
50140T	Spot for 50139-140	① 5100 D2	9v	② 5450 D2	9v	③ 5450 D3	7½v		
50141	HD 172167	18 33.5	+38 41	21:43	21:57	1h10w	38°53	TH-A	~~40s .180~~ 40s.32
Focus Tests ①		3PM EST	Sept 2/87	Done Temp =	63°f H=	45% outside			
50141 F1	Focus tests comparing all Plate holders					0 0	+6 4	FeNe A 1/4	12 12
F2		Note use of different apertures, times						"	"
F3		exp meter blank filter holder in						FeNe A 1/2	~~15~~ 12 ~~15~~ 16
F4		and use of diffuser (slide down)						"	20 20
F5								"	"
F6	Focus tests ②	4PM EST	Sept 2/87					"	"
F7								"	"
F8								"	"
F9								"	"
F10								"	"

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... 188 .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1300 V.											
102		3.93	FOp	ECHELLE	1200/ .400	60μ (.280)	IIa De	I.T.	Asm-Sp/KK	ECHELLE TILT = 1.600 H = ½mm (.223) S = 250	
38		3.93	FOp	ECHELLE	1200/ .325	60μ (.280)	IIa De	I.T	Asm-Sp/KK	F = .105	
											good
410		004	AOI	ECHELLE	1200/ .325	60μ (.280)	IIaO e	2	STD. VEL		
no filter											
150				BC	1200/405 G4310	BS	098	1	T = 60.5°f Set 388 discarded	Too W.K	too weak
150											
"				"	"	"	"	2	"	" discarded " "	" "
460	note	FeNe in diffuser		"	"	"	"	3	"	"	OK
330	A/a	20/20 secs									
830				v	"	"	"	4	"	"	ideal
920		is optimal									
820			Tn	"	"	"	"	5	"	"	
880											
800								1		Set 388 still	
850											
" "								2			
"								3			
"								4			
"								5	T = 62 °f	Set 388 over →	

189 cont of 5 Wed Sept 2 @ 4 PM EST

Emulsion Batches: .....

Date Sept 2 '87 Observers Jm .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
5014 F11	Focus test	Repeat of	5014 F6			0 0	+6 41	Fe Ne	20
								A 1/2	20
5014 2 F1	Focus tests (Mon Sept 14 ≈			14 hrs EST	15 hrs	0 0	+19°28	Single source	4
F2								no aperture	4
F3									
F4									
F5									
F6									
F7									
F8									
F9									
F10									

Note - Dome Temp = 65°F

- All very carefully done. ie PH is very clean, tiny loading irregularities observed (there were none), BS resecured in place, Decker coupler readjusted and each decker movement gently done. (decker coupler was nice and smooth)

By F1-F5 loaded into spectrograph with any NS plug biased by a North push

F6-F10 " " " " " " " by a South push

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 190

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
No filter											
= 800				BC	G 4310	BS	098	1		T = 62.5°f Set 388	
= 900					1200/405						
Blue filter											
= 6K				BC	G5440	BS	098	1		T = 62°f Set 388	
= 8K					1200/50.7						
								2			
								3			
								4			
								5		T = 62.5°f	
								1			
when clamping in.								2			
"	"	"						3			
								4		- "4" brake off during clear bowling	
								5		T = 63°f Set 388	

191

Mon – Tues

Date . Sept. 14/15/87 .. Observers . LG. Tm. /.....

Emulsion Batches:
.. IIa.O.-e ... 1A7 ..... Aug 20
5m 68° .. IIIa-F-Hyp .. 1H7 ..... Aug 19
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/~~Filter~~	Comparison Exp.
50142	HD157482	17 18.5	+40 04	19:07	20 15	2 09W	+40 09	Single source none	*1 ? 2 3 3s 2 secs
50142T	Spot Calib for	50142, 44		15 min @	15V D4 3900	D3 4300	D2 4810		Cnts
50143	HD 170200	18 23.1	+06 08	20 22	22 23	3 11 W	+06 21	Single Source none	1 = 2800 1 = 2900 1 = 2900
50143T	Spot Calib for	50143		15 min @	17.5V D4 3900	15V 4300	15V 4810		
50144	HD222368	23 34.8	+05 05	22 28	22 38	1 47 E	+5 43	Single Source None	1=2900 1=2670

Spectr. Te
Focus ..
Spectr. Te
Exp. Mtr.
17176
14900
8700

Spectr. Temp. ..67°F..... Dome Temp./Hum. 63°F/70% Transparency Conditions ...Fine..... 192

Focus ..38.7.....

Spectr. Temp. ..63°F..... Dome Temp./Hum 57°F/85%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
17126	OK	6.2	G III d F8	BC.	1200/50.7 (5440)	BS	IIaO-e	4	SB-Ly.	* Timer set on "1 sec" results in much longer exp 2 3secs	OK
							IIIaO-e				✓
19000					5440						fog
14000	OK	5.7	B8 III - IV	BC	1200/50.7	BS	IIIaJ-efg	4	SB-Ly	T=66°F	Exp OK
							IIIaJ-efg				✓
8700	OK	4.6	F7 V	BC	5440 1200/50.7	BS	IIaO-e	4	STD VEL.		fine

193 Thurs-Fri

Date Sept 24-25/87 Observers T.A. KK checking by phone

Emulsion Batches: Ilford 3U5 Sep 22

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50145	96 Her HD164852	17 58.1	+20 50	19 02	21 04	2 59W	+2056	FeNo+ Clear	1 sec 1 sec 1 sec
50145T	Spot Calib for	50145-46	+ Next night		15 min @ D4	17.5V 3900	15V 4300	15V 480	
50146	HD 222368	23 348	+5 05	21 11	22 07	1 37 E	+5 38	FeNo+ clear	1 sec 1 sec 1 sec
Note-	Extra blank but prob figged plate in Exp Box is from Old Unexp								

Spectr. Te
Focus ...
Spectr. Te

Exp Mtr Blue + Yellow
17000
22,000
10,600
13,000

Spectr. Temp. 59°F ..... Dome Temp./Hum. 53°F / 75% Transparency Conditions ... O'K - ... Sl. cloudy .....

Focus ... 390 .....

Spectr. Temp. ... 54°F ..... Dome Temp./Hum. 48°F / 88%

194

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
17000	2-3"	5.19	B3 IV	BC	G=5440 1200/5d7	BS	IIIa-Eg	II 1	SB Ly	* single source (Plate was tight in PH) Some cloud	fair
22000							IIIaJ-Eg			Severe RA oscilat. @ 2 1/5 W	v
10,600	poor	4.6	F7 V	BC	1200/507	BS	IIIaJ-Eg	1	std vel	(Plate NOT tight in PH) cloud again	sl v k
13,000											
IIIaJ box 1A7 - J4/23, Just to see how much fog there is											
I brought box back to building anyway tonight.											

195 Fri - Sat

Date Sept 25-26/87 Observers Tm ... Mt. checking on me.

Emulsion Batches:
Mas. ofg 335 — Sept 22
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50146F	Focus test			1830		0 0	+20 56	FeNe clear	4 4
50146T	96 HeR HD 164852	17 58.1	+20 50	18 40	19 55	1 55W	"	n	1 sec 1 sec 1 sec
50148	HD 170200	18 23.1	+6 08	20 01	21 33	3 04W	+6 16	n	1 sec 1 sec 1 sec
50149	HD 222368	23 348	+5 05	21 37	22 16	1 24E	+5 39	FeNe clear	1 sec 1 sec 1 sec
DT 000 139.Tm	"	"	"	22 19	22 26	1 14E	"	K03	in gear
140.Tm	"	"	"	22 28	22 36	1 03E	"	K10	Just leaving

Spectr. Temp. 57°F ..... Dome Temp./Hum. 52F / 50% Transparency Conditions ... Excellent .....

Focus ..... 340 .....

Spectr. Temp. 53F ..... Dome Temp./Hum. 47F / 80%

EST = 5T Tonight 196

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
≈6K					G5440						
≈9K				BC	1200/50.7	BS	098	1			v s/Red
23K											
22K	OK	5:9	B3IV	"	"	"	IIIaJ-efg	1	SB-Lg	s/ hazy @ end	fine
15K										Severe RA oscillation @ 3" 04 W	
11,700	SOSO	5:7	B8 III-IV	"	"	"	"	1	"	No wind at all	"
	DI										
14,300											
14,000	SOSO	4:6	F7V	BC	1200/50.7	BS	IIIaJ efg	1	Std Vel	T=54F	fine
~~Exp~~	poor	Drive	Test				npf=7		63 columns	normal looking	
	SOSO						"		"	Program Quit upon attempt saving	"

197 Mon - Tues

Maj Dev Oct 3 5 min @ 687 Tn

Emulsion Batches: III a-f cfg 315 - Sep 22

Date Sep. 28-29.87 Observers L.y. - T.m

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50149F	Focus test			18 34		0 05W	+20 56	FeNe clear	4 sec 4 sec
50150*	96 Her HD 164852	17 58.1	+20 50	18 38	22 16	4 26W	+20 56	FeNe clear	1 sec 1 sec
50149T	Spectrum calibration	50149		15 min @	04 17.5V 3900	15V 4300	15V 4810		

* 50150 plate labeled "49"

22

Spectr. Temp. 70.5°f ..... Dome Temp./Hum. 68°f / 70% Transparency Conditions . Sl. Hazy / [illegible]

Focus ... 3.87 .....

Spectr. Temp. . 69°f ..... Dome Temp./Hum. 67°f / 70%

198

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6 K					G=5440						center
8 K				BC	1200/507	BS	098	1			sl Red
4300	≈ 3"	5.19	B3 IV	"	"	"	IIIaJ-eg	1	SB - Lg	some cloud	
0120	soso									several RA oscillations 2"47"	ok
							IIIaJ-fg				✓

Comparison Filter Exp

199 Tues-Wed

Date Oct. 13-14. 1.87. Observers Ly.-Tu.....

Emulsion Batches:
g^m 680 IIa0-e 1A7 Aug 20 1.87
IIa0-E* 1A7 Sept 13 87
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50151 F1	Focus test			17 50		0 0	+34°	FeNe none	4 4
F2	"					"	"	"	"
F3	"					"	"	"	"
F4	"				18 08	"	"	"	"
50151	HD 183656	19 25.6	+03 14	18 09	19 10	00 50 W	+3 30 *	FeNe	1-1-1
50151T	Spot Calib for 50151-58				15 min @ 15V	D4 3900	D3 4300 D2 4810		
50152	HD 182917	19 24.2	+50 13	19 18	23 16	05 03 W	+50 24	Fe/Ne	1-1-1 2050 c/s
50153	HD 11188	01 44.9	+46 58	23 22	00 50	00 11 W	+47 33	FeNe	1-1
50154	HD 14633	02 16.7	+41 02	00 55	02 18	01 07 W	+41 37	"	1-1-1
50155	HD 25638	03 59.0	+62 04	02 29	04 04	01 09 W	+62 29	"	1-1-1
50156	HD 27295	04 13.6	+20 54	04 16	04 31	01 23 W	+21 18	"	1-1 2000 2200
50157	HD 44990	06 19.8	+07 08	04 38	05 21	00 07 W	+7 17	"	1 2500 2624
50158	HD 62509	07 39.2	+28 16	05 25	05 27	01 05 E	+28 15	"	(-1 2400 2600

Spectr. Temp. 50.5°F ..... Dome Temp./Hum 48°F / 58% Transparency Conditions ... Fine

Focus ... 392 200

Spectr. Temp. 44°F ..... Dome Temp./Hum +38°F / 87% 800 mbyte ft. = +2000

Exp. Mtr. 8440 filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6K 7K				BC	G5440 1200/50.7	BS	098	1			SI Real
				"	"	"	IIa-e	5			
				"	"	"	"	3			
				"	"	"	"	2			
6009 7040	OK	6.0	A0e	"	"	"	IIaO-E*	1	Kub-Ly	* Recorded Occ Prob 3° 37 Tau Rect @ 9600 ideal for guiding	Fine bubbles?
							IIaO-E*			(Cold box on Echelle) severe RA oscillation @ 4h 12m W	
2200 2240	OK	8.4	Mb	BC	1200/50.7	BS	IIaO-E*	1	CH Cyg	SI hazy @ end T=48°F	SI wet
4550 4500	good	7.1	B8	"	"	"	"	1	Ly SB	T=46°f	OK
6010 6030	"	7.3	O8V	"	"	"	"	1	SB - Ly.	focus Set 393	fine
4500 4500	OK	57.3	B0	"	"	"	"	1	EB - Evans	NW comp of Dbl (Theoretical orbit)	OK
10000.	OK	5.3	B9IV	"	"	"	"	1	Am - Ly.	T=44°f	OK
8000.	So So	V 5.6-6	F7Iab	"	"	"	"	1	Bin Cep - Evans	.	OK
9200	OK	2.1	K0III	"	"	"	"	1	STD Vel.	T=44° F	NO GOOD 1/2 plate has 2 axes

201

Date . Oct. 14-15. 1987. Observers . Ly. - TG. . . . . .

Emulsion Batches:
. . IIaO-E . . 1A7 . Sept 13/87
. . IIaO-E* . . 1A7 . . Oct. 14/87
. . . . . .

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50159	HD183656	19 25.6	+03 14	18 07	18 57	0 41 W	+3 37	FeNe clear	1-1-1
50159T	Spot Calib for 50159			15 min @ 15V		D4 3900	D3 4300	D2 4810	
50160	HD157482	17 18.5	+40 04	19 01	19 47	3 39 W	+40 09	FeNe clear	1-1-1
50160T	Spot Calib for 50160		66 + 50167-68 (next night)	15 min @ 15V		D4 3900	D3 4300	D2 4870	
50161	HD11188	01 44.9	+46 58	19 57	21 55	2 42 E	+47 33	Fe Ne clear	1-1-1 (mos)
50162	HD14633	02 16.7	+41 02	22 01	23 45	1 22 E	+41 36	"	1-1-1
50163	HD39743	05 49.4	+49 01	00 00	02 07	2 32 E	+49 12	"	1-1-1
50164	HD27295	04 13.6	+20 54	02 15	0237	0 26 E	+21 18	"	1-1
50165	HD22484	03 31.8	+00 05	02 43	02 55	0 35 W	00 33	"	1-1
50166	HD44990	06 19.8	+07 08	03 01	04 11	0 57 E	07 17	"	1-1-1
50166F	Focus					00 00	07 17	"	4/4

Spectr. Temp. 53°f Dome Temp./Hum. 54°f / 50% Transparency Conditions Sl. hazy 202

Focus 391

Spectr. Temp. 49.5°f Dome Temp./Hum. 43°f / 80% gusty from SW

(Coldbox off escalolle for twilight)

Exp. Mtr. Rlwof Her	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6080 6000	OK	6.0	A0e	BC	G5440 1200/5007	BS	IIaO-E	1	Kub-Ly		fine
							"				↓
6010 6000	OK	6.2	dF8 +G	BC	G5440 1200/5007	BS	IIaO-E*	1	SB-Ly	mild RA severe @ 3h30 W type asdt.	fine
							"				↓
4500 4730	5-50	7.1	B8	BC	G5440 1200/50.7	BS	IIaO-E*	1	SB-Ly	some cirrus.	OK
4510 5000	OK	7.3	08V	"	"	"	"	1	"	T=53°f	OK
2500 2600	poor	~7	G8III	"	"	"	"	1	H+K-Ly		sl wk
11,086	OK	5.27	B9IV	"	"	"	"	1	Am-Ly		OK
8150	OK	4.5	F8V	"	"	"	"	1	STD VEL.		OK
4000. 3756.	OK- poor	↓ 5.6-6.6	F7Iab	"	"	"	"	1	Bin Cyg-Gem.		OK
				"	"	"	"	1		set 391 T = 49.5°f	(tilt & color Rel in Ung end

203 Thurs - Fri

Date Oct. 15/16/87 Observers Tn

Emulsion Batches:
IIa-O-E IIA - Oct 14/87

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50167F	Focus test			17 55		0 0	+346	FeNo clear	4/4
50167	HD183656	19 25.6	+0314	18 08	19 16	W	+337	"	1-1-1
DT000140.Tn	HD 222368	23 348	+5 05	19 26 48	19 33 32	2 48E	+5 44	200 frames	int x0 frames
50168	"	"	"	19 44	20 02	2 20 E	"	FeNe clear	1-1
DT000141.Tn	"	"	"	20 09 42	20 21 02	2 00 E	"	~~200~~ 428 actual	0 int
DT000142.Tn	HD 222368	23 348	+5 05	20 33 08	20 43 43	1 37 E	+5 44	400	int x0

Spectr. T
Focus...
Spectr. T

Exp Mtr.
Blue F-Ha

6K
8.4K

60c4
@ 6000

UAG ent

8450

Note 998
Frames spac-by

@ Vac

Vol ager

Spectr. Temp. 54.5°f Dome Temp./Hum. 55°f/70% Transparency Conditions hazy 204

Focus 3.90

Spectr. Temp. 52°f Dome Temp./Hum. 48°f/85%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6K											tilt ✓ Red is Blue Ross OK
8.4K	~~Vgd~~			BC	1200/50.7	BS	IIaO-E	1			
6004 = 6000	Vgd	6.0	H0e	"	"	"	"	1	Kub-Ly		fine
1420 and	good-Vgg	4.64	F7V	"	"	"	"		63 columns	npf=7	normal
8450	"	"	"	"	"	"	"	1	std/vel		OK
Note 998 is comes spectrum	"	"	"			"			63 columns	npf=7	normal
@ ~ V on gear											
V01 on gear	fine								63 columns	npf=7 sl cloudy	normal

205

Sun - Mon

50159 → 50171 Dev Oct 20 @ 68ϕ Tu

Date Oct. 18-19/87 Observers Ly. - Tu

Emulsion Batches:
IIa-O-E 1A7 - Oct 14/87

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50169	HD 183656	19 25.6	+3 14	18 21	19 23	01 24 W	+3 37	FeNe Clear	2+1
50169T	Spot Calib for	50169-71			15 min @	15V 04 3900	D3 4300	D0 4810	
50170	HD157482	17 18.5	+40 04	19 28	21 09	05 19W	+40 11	Fe Ne Clear	1-2-1
50171	HD11188	01 44.9	+46 58	21 18	23 58	00 22E	+47 11	Fe Ne Clear	1-1-

Spectr. T
Focus...
Spectr. T

Exp Mtr

Spectr. Temp. 53°f ..... Dome Temp./Hum. 52°f / 80% Transparency Conditions . sl. hazy ..... 20.6 ....

Focus ..... 5.91 .....

Spectr. Temp. 50°f ..... Dome Temp./Hum. 44°f / 97%

Exp. Mtr. Blue & Ha	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6020 5979	OK	6.0	A0e	BC	G 5440 1200/50.7	BS	IIaO-E	#1 ~~#3~~	Kub-Ly		OK
							IIaO-E				—
5,995 6,000	850	6.2	G+F8	BC	G 5440 1200/50.7	BS	IIaO-E	#1 ~~#2~~	Triple-Ly.	around 4-5 hrs UT Only slight RA oscillation	OK
4030 4300	"	7.1	B8	"	"	"	"	#1	SB-Ly	51°f cloud	sl wk

207 Wed-Thurs Echelle - Reticon tests

Date Oct 21-22 1987 Observers R.K.-Tu.-Sc

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.	Exp Mtr. Retrac
ER0001	Vega			21 02	21 11	4 15 W	+40 00	Th-A	60 sq 60 oc	500
ER0002	Vega			21 15	21 24	4 28 W		"	60sq	750

Spectr. Temp. ..... Dome Temp./Hum. 45°F/70% Transparency Conditions ... Partly clear 208

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Reticon											
500	poor			Echelle	1200/8548	50μ/600μ			KK echelle	Echelle tilt = 1.5	
750	poor			"	"	"			"	"	
		Reticon		Dewar	Topped up @			22:30 EST			1

209 Sun - Mon

Date ..Oct 25-26/87 Observers ..T.m.....

8m 67° Emulsion Batches: ..IIa-O..IA7..-..Oct 22/87

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50172	HD 183656	19 25.6	+03 14	18 04	19 13	01 41 W	+3 37	Fe Ne clear	1-1-1
50172T	Spot Calib	for 50172-76.			15 min @ 15V	D4 3900	D3 4300	D2 4810	
50173	HD 157482	17 18.5	+40 04	19 21	20 47	05 23 W	+40 11	Fe Ne clear	1-1-1
50174	HD 111188	01 44.9	+46 58	20 55	23 38	00 14 E	+47 33	"	½-1-2
50175	HD 14633	02 16.7	+41 02	23 47	01 21	00 59 W	+41 37	"	1-1-1
50176	HD 22484	03 31.8	+00 05	01 28	01 41	00 04 W	+00 34	"	1-2-2
50176F	Focus Test					"	"	"	3-3

Spectr. Temp. 43°f ..... Dome Temp./Hum. 44°f / 66% Transparency Conditions . OK - sl. cloudy ..... 210 .....

Focus .... 3929.3933 .....

Warm Room Temp = 66°f Heat Pump working now

Spectr. Temp. 38°f ..... Dome Temp./Hum. 30°f / 98%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6230 6270	OK	6.0	A0e	BC	G5430 1200/5088	BS	IIaO-e	1	Kub-Ly		fine
							IIaO-e				"
5000 5900	soso	6.2	dF8 +G	BC	G5430 1200/5088	BS	IIaO-e	1	Triple-Ly	seeing going v. bad thin cloud T=42°f	fine
6050 6065	soso	7.1	B8	"	"	"	"	1	SB-Ly	42°f	OK
4100 4160	poor	7.3	O8V	"	"	"	"	1	"	T=40°f Set 393	sl wk
4100 4080	OK	4.5	F8V	"	"	"	"	1	std vel		fine
6500 7,500				"	"	"	"	1		T=38°f Set 393	"

211 Tues-Wed

Developed 7 min @ 68°F (New chemicals) next night too (done together) Tm

Emulsion Batches: IIa0-E 1A7 — Oct 22/87

Date Oct 27-28 87 Observers Tm / KK class

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50177	4D1836556	19 25.6	+03 14	18 18	19 25	02 02W	+03 37	FeNo Clear	1-1-1
50177T	Spot Cals for 50177		+50178 − 80 next night		15 min @ 15V	04 3900	03 4300	02 4810	
	Then KK Class tour — Looked @ Saturn nebula and Jupiter								

Spectr. T
Focus...
Spectr. T
Exp Mtr
Blue Filter
6300
6300
1 50

Spectr. Temp. 48°f Dome Temp./Hum. +49°/90% Transparency Conditions Clearing 212

Focus 391

Spectr. Temp. 45°f Dome Temp./Hum. 43°f / 98%

Rm T @ 18:30 = 66°f

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6 300					G 5430						
6 300	poor	6.0	A0e	BC	1200/50.8	BS	IIaO-e	1	Kab-Lq	some cloud	fine
							IIaO-e				
~ 50	people										

213 Wed-Thurs

Date Oct 28-29/87 Observers TA

Emulsion Batches: IIaD-e 147 - Oct 22/87

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50178	HD 203156	21 15.4	+37 49	20 14	21 19	02 09 W	+38 22	Fe Ne Clear	1-1-1
50179	HD 14633	02 16.7	+41 02	21 26	23 13	00 59 E	+41 37	"	1-1-1
50180	HD 22484	03 31.8	+00 05	23 19	23 39	01 47 E	+00 34	"	1-1-1
50180F	Focus test			23 42		01 44 E	"	"	4-4

Spectr. Temp. 47°F Dome Temp./Hum. +38°/ 90% Transparency Conditions . Some Cloud 214

Focus 3.91-393

Spectr. Temp. ~~40°F~~ 41°F Dome Temp./Hum. +33°F / 97%

W in Rm Temp = 63°F @ 21 hrs
drafty too. Cool air from ducts

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4,500					G5430						
4,500	soso	6·17	F2	BC	1200/50·8	BS	IIaO-e	1	Ceph-Rm	big temp drop in spectrograph	fine
4,050											
4,045	poor	7·3	08V	"	"	"	"	1	SB-Lg	T=42°F Set 393	sl wk
4,030											
4,050	"	4·5	F8V	"	"	"	"	1	std/vel	T=42°F some cloud	V sl wk
				"	"	"	"	1		cloud Set 393 still	OK but Rel in Blue end

215 Tues-Wed

All's developed Nov 11 by KK

Date Nov 10-11/87 Observers Blm-TG

Emulsion Batches:
IIaO-e 147 - Oct 22/87
*IIaO-e 147 Oct 27/87
IIIaJ-efg 345 Sept 22 2613

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50181	HD 193322AB	20 14 8	+40 25	17 37	18 39	01 23 W	+4053	Fe Ne Clear	1-1-1
50182	HD 199579	20 53.1	+44 33	18 42	19 38	01 43 W	+4502	Fe Ne Clear	1-1-1
50182T	Spot Calib	for 50181-182			15 min @ 15V	04 3900 03 4300	02 4810		
50183	HD 209975	22 02.1	+61 48	19 43	20 10	01 05 W	+6223	Fe Ne Clear	1-1-1
50183T	Spot Calib	for 50183-186			15 min @ 15V	04 3900 03 4300	02 4810		
50184	HD 222368	23 34.8	+5° 05'	21 14	21 24	00 45 W	+5° 43'	Fe Ne Clear	1-1
50185	HD 14633	02 16.7	+41 02	21 32	23 36	00 14 W	+4136	Fe Ne Clear	1-1-1
50186	HD 36485	05 26.9	-0° 22'	23 41	01 21	0108 E	-0007	Fe Ne Clear	1-1-1
50187	HD 37468	05 33.7	-02 39	01 27	01 46	00 50 E	-0226	"	1-1-1
50187T	Spot Calib	for 50187		15 min @ 04	17.5V 3900	15V 4300	15V 4810		
50187F	Focus test						-0226		5/5

Spectr. Temp. ..33°f..... Dome Temp./Hum. 130°F./60%. Transparency Conditions . Mostly clear. - thin cirrus. 216

Focus .....3.99, 4.01.....

Spectr. Temp. ..29°f..... Dome Temp./Hum. 122°F./85%. Kt's class Tour looked @ M32

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7005			*		G4290						
7000	So so	5.94	09V	BC	830/40.2	BS	IIaO-e	1	O*-Bkg	*09V: ((n))	fine
7040											
6950	"	5.965	06V	"	"	"	"	1	"		fine
							IIaO-e				v.
6980											
7048	So so	5.19	095Ib	BC	830/40.2	BS	IIaO-e*	1	O*-Bkg		fine
							IIaO-e*				v.
8000	So so	4.64	F7V	BC	830/40.2	BS	IIa-OE*	1	RV Std	T=32°f	fine
6,175											
6050	"	7.26	ON8V	BC	830/40.2	BS	Ia-O*e	1	O*-Bkg		fine
7998											
6005	"	6.70	B2Vp	BC	830/40.2	BS	IIa-OE*	1	He-Rich *	T=30°f Set 401	fine
19,480											*
9990	poor	3.51	095V	BC	830/40.2	BS	IIIaJ-efg	1	Bkg-grey		Str
							IIIaJ-efg				*
					G4290						v.
				BC	830/402		IIIaJ-efg	1		T=29°f Set 401	Cont. Red
				*							
					1°0 c	IIIaJ	have somewhat too much		background fog	Tu	

217 Wed Thurs

Date Nov 11-12 1937 Observers Ly-Tn

Dev developer 5 min @ 68°F Tn

Dev 40 Nov 17 @ 68°F Tn

Emulsion Batches:
Date 1A7 — Oct 27 '37
Type III-a-F Exp 315 — Sept 22

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50188	HD 183656	19 25.6	+03 14	17 35	18 21	01 55 W	+03 36	FeNO clear	1-1
50188T	Spot Calib for 50188				15 min @ 15V	D4 3900 D3 4300	D2 4810		
50188F	Focus test			18 40		00 35 E	+10°	FeNe clear	4/4
50189F1	" "	G12		01		3 00 W	+	"	7/7
50189F2	" "	G12		"		3 00 W	"	"	7/7
	KK								
Note.	When loading	films for	Focus tests,	dark Run	door was s/ adjar.	If any fog,	then	rep	

Spectr. Temp. +35°F Dome Temp./Hum. 36°F / 50% Transparency Conditions Some cloudy 218

Focus 396 — Solid Cloud

Spectr. Temp. ..... Dome Temp./Hum. 30°F / 70%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
10,300	50%	6.0	A0e	BC	G5430 1200/50.8	BS	IIa0-e	1	Kab-Ly	* Numbered and broken off Scomes[illegible] and by cloud	OK
							IIa0-e				
				BC	1200/50.8	BS	IIa0-e	1		T=35°F Set 396 UV Red Cam for esp / Blue Cam for esp	
				"	830/40.6 *	BS	IIIaJ-eG	3		T=34°F Set 399	Cam s/blue
				"	830/40.6 *		IIIaJ-eG	1		" "	OK
					* Grating tilt was @ 40.6 instead of the usual 40.2 although G' setting was 4290.						
existing	2"/s	sa	Unexp box will be affected by prob s/ Less. / No, no additional fog is appared (after developed)								Tm

Note Nov 17/87 Focus test *50188F is very bad; Might be an indicatn of problems with PH #1 or of PH mounting ??, Tm

* Previous exp was OK however, Maybe broken piece of plate from this exp caused problem with next focus test. Tm

219 Thurs - Fri Echelle Retiroon

Date Nov. 12-13/87 Observers K.R.-Th

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.	Exp. Mtr.
								~~1~~ sec	10sec	~~10~~
	100 sec Flat Field								100sec	5520
	Comp							ThA	100sec	96
S	AI HD 358	000313	+28 32	21 09	21 22					550
	Comp							ThA	100	
	Comp							ThA	50	53
	HD 358			21 39	21 51					610
	Comp							ThA	~~100~~ 50	
	Flat Fld		no "dust", compared to 1st one. (Δz diff of course)						50	
	repeat								100	617
	Jupitor	0122	+7	22 16	22 32			ThA	100	
	Parks x~~4~~		1, 10, 100, 1000 secs.					ThA	100	500

Spectr. Temp. ..... Dome Temp./Hum. ...../.92.2.0 Transparency Conditions ...hazy to cloudy 220.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. ~~counts~~	Seeing	Ptg. Mag.	Sp.	~~Inst.~~ Ref counts	Grating/ Cross Tilt	Slit	~~Emulsion~~ ~~Grating Tilt~~	P.H.	Program	Remarks	Quality
~~106~~ /										(•3620 cross 90° tilt)	
5520				1223	•3620	75μ	~~•3620~~				
96				1142/2000							
550		1.97		450/1000						α And	
				1169/2000							
53					•3268	"	2nd comp •3262				
610				1181/2000	•3262						
				1310/2000	•3262					should be = λ 4550 Å	
				"	"						
4417				3744/4000	"						
500				"	"	75μ				Comp	

Comparison Filter	Exp
	1100
	100
	100
	100
	50
	50
	100
	100
	100

221

Tests Dev Decl Tn

Emulsion Batches: .....

Date .Dec. 1. 1.87..... Observers .Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
501 90 F1	(Focus Tests to determine			20 13		0 0	+10°	FeNo clear	6 6
F2	repeatability)					"	"	FeNo clear	6 6
F3	* Particularly the apparent "sponginess" at the					"	"	"	6 6
F4	north end of PH in mount. IT seems that if					"	"	"	6 6
	I fono 'normally' mounts PH (ie just pressure at mid point while clamping in)								
	and then gives an additional push up at N end of PH, that N end goes up more and								
	stays at new posn when released. It's very subtle to the eye.								

Spectr. T
Focus...
Spectr. T
Exp. Mtr
Plate/Filter
4464
1374
4507
4593

Spectr. Temp. 36.5°F Dome Temp./Hum. 33°F/85% Transparency Conditions 222

Focus 3.95

Spectr. Temp. 36.5°F Dome Temp./Hum.

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	G5430 1200/50.8	BS	Hasc	1		normally placed in mount	OK blue-tilted
4964				"	"	"	"	1		* N end pushed up more	Flat S blue
4374											
4680 2,900				"	"	"	"	1		normal	v sl blue blue/R-1
4813 10,900				"	"	"	"	1		* Need pushed up more	v sl blue Blue OK
							"	1			
							"	1			

223 Sat-Sun

Date Dec 5-6/87 Observers In

7m 72°F Emulsion Batches: IIa0-e
Dav 5m 68°F IIIaJ-e.g. I.A.7 - Nov 24 23h13
00c 8Tn

Plate No.	Object	R.A. 1900 1950	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50190	Nova Buckmann Collins	19 02 01	+21 40	17 18	18 19	3 54 W	+21 56	IIaNe clear	1-14 90 4-15 00
50190F	Focus test (normal/non stig)					0 0	-1°30'	11	4-3500 2-4709
50190	HD 222368	23 34 8	+5 05	18 58	19 11	0 12W	+5 45	11	1-1505 1-1570
50191									
50192	HD 37468	05 33.7	-2 39	21 44	22 12	2 45E	-2 24	IIaNe clear	2-3,100 2-2250
50192T	Spot Calib for	50191-92			15min @ D4	17.5V 3900	15V 4300 15V 48	10	2-2700 ~
50192	HD 37742	05 35.7	-02 00	22 20	02 47	2 12E	-1 45	IIaNe clear	2-2200 2 1150
50193F	Focus test					0 0	+3 25	11	6 3

Spectr. Temp. ..32°f..... Dome Temp./Hum. 27°f / 80% Transparency Conditions ..semi clear..... 224

Focus ...3.97.....

Spectr. Temp. ..30f..... Dome Temp./Hum. ...../.90.6

Note I hand tightened down cass hole light baffle in posh that best corresponded to old scratches from previous tightening of nuts

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
239 *	bad	28		~~BC 1200/507~~	1200/507	BS	IIIaJ-e	1	~~Blue~~	Prob nothing much RII oscillation in wind *	wvs/ cant otherwise blank
				〃	〃	〃	〃	1	T=32°f		blue and Red
										Field	ok ~~Red~~
9854	so so	464	F7V	〃	〃	〃	〃	1	std vel	finder scope	OK
		~~35~~									
40,125	poor	3×51	09.5V	BC	830/402	BS	IIIaJ-e	1	Blu-prog	T=30°f Set 399	fine
							IIIaJ-e				ok
39,400	OK	1.54	09.5V	BC	830/402	BS	IIIaJ-e	1	Blu-prog	cloud by ~~22:~~ 22: (25-40)	fine
5 000 8 000				〃	〃	〃	〃	1		T=30.5°f Set 399	faint s/Red

225 Tues

Dev Da 8/87 Tn
5 min @ 68°f

Emulsion Batches:
Ilford Ref. I.D.7. 24 Nov 87
23 hrs 90s

Date Dec. 8/87 Observers Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50194F1	Focus test to check BS adjustments noted				Dec 7 in Prime	01 11 W	+3340	FeNe	9
								Clear	4
F2	" "				Logbook.	"	"	"	13
									6
	BS Thru Put with (Exp meter) Tests						+3340	FeNe	10
								Clear	10
							"	"	10
								"	10
								"	10
	(Stellar @ what I consider Ideal decker adj for max light to grating)							"	10
		"		"				"	10
		"		"				"	10

Spectr. Te
Focus...
Spectr. Te

Exp Mtr. *
5,400
4,670
7560
7640
9420
1475
673
E751
E787
880
876
858

Spectr. Temp. 37°F ..... Dome Temp./Hum 40°F/100% Transparency Conditions ... Cloudy ..... 226 ...

Focus ... 396 .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

Exp. Mtr. * Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5,400	comp				G5430						
4,670	Stellar			BC	1200/5018	BS	IIIaJ	1	* Note Count Rate for this source is about		VS1 Red
7560											
7640				"	"	"	"	1	1/2 of former count rate!!		VS1 Red
			P.S. Upon development, it was obvious that "upper Comp" with blue @ Left, is much weaker. Red end looks too weak too. Tm								
1420	Stellar		Forgot to take off diffuse cover.								
1475	Stellar										
1073	Comp										
6751	Comp										
6787	"										
6,180	Stellar		seem tentatively to be ≃ 1,600/sec as compared to ≃ 1/150/sec for the two earlier focus tests.						Timer not to accurate for < 3 secs however.		
6126	Stellar										
5958	Stellar										

227 Mon - Tues

Using Warren Rm Clock

Date Dec. 21-22/87 Observers KK-Tn

Emulsion Batches: .....

.....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Flats x4							Tungsten	lamp	See
Comp	Hoff						Hollow cathode		45 sec
		19865						comp	
	α And	00 07.6	+29 01	18 31	18 42	00 19 W		comp	45
	"	"	"	18 45	18 59	00 36 W	+29 13	"	45
	Jupiter	≈01 22 1900	+6 40	19 09	19 24		+	comp	45 sec
	Polaris HD 8890	01 22.6	+88 46	19 49	20 16	00 31 E	much cloud	comp comp	45 45
	"	"	"	20 ≈20	20 47	00 05 E			45
	Flat Fld x3	"	"		20 47	"			See
									8
		19865						comp	45
	Capella	05 15.6	+45 57						
	α Per	03 23.4	+49 49	22 27	22 47	1 07 W	+	comp comp	45 45
	"	"	"	22 50	23 10	1 30 W	+50 00	comp	45
	Flat Flds x3	"	"	(They are too weak) ??			"		
Dept	Flat Fld			(drive off)			"		15
	" "								40

Spectr. Temp. ..... Dome Temp./Hum. +3°C/60% Transparency Conditions ... Fine ... 228 ...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ... / ... Echelle Testing

Exp. Mtr. ~~1/8 filter~~	Seeing	Ptg. Mag.	Sp.	~~Inst.~~ Echelle Focus	Grating/ Tilt	Slit	~~Emulsion~~ Ref Counts	P.H.	~~Program~~ CROSS GR Tilt	Remarks	Quality
~~3319~~ ~~3319 counts~~	3319 counts			.314	1.535	45μ			.3578	Sharp lines noted on Lower-	
41 cnts				"	"	"			"		
300 for stellar	50:50		69p	"	"	"	273 cnts		"	Turbo stuck off slit	
400	50:50		"	"	"	"	345		"	before terminating exp.	
600				"	"	"	≈800		"		good solar spectra
500	poor	20	F1b	"	"	"	~740		"	*1949 ca. tel start of star on slit.	
500							121				
1868										clockwise twist to Sanigar	
1666											
23					Problem with Echelle grating mnt.					Comp counts slower	
600	OK	23	F5 16	.314	1535	45μ	500 cnts		.3578		OK
600							389				
2500							472	no good, pinkout			
7383							1566				

229 Cont

Date .... Observers ....

Emulsion Batches:

....

....

....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Field					1 40W	+50 00		30sec
									30sec
	Dark 10, 100secs, 1, 10000								

Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ....

Focus ....

Spectr. Temp. .... Dome Temp./Hum. ....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt [illegible] counts	Slit	Emulsion	P.H.	Program	Remarks	Quality
6012						45μ					[illegible]
6172					1280	"					
					28'(100')						

231 Wed-Thurs Reticon Echelle work

Emulsion Batches: .....

Date Dec 23-24/87 Observers ...T.S.....K.K..... .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Fld x								5sec
	" "								
	" "								
	" "								
	Jupiter	1988 01 15	+6 40	20 47	20 59	01 38W	+6 44	Comp	45sec 45
	"	"	"	21 03	Lost due to plotting				
	Jupiter			21 13	21 33			Comp Comp Comp	45sec 45sec 45sec
	Capella	1988 05 15.7	+46° 00	21 45	21 55	E	+46 11		
	Capella			21 57	22 07	01 20E			
	Flat	@ Capella posn.							?
	Flat	"	"						90
	Flat	"	"						90
	Flat	"	"						45
	Capella	05 15.7	+46 00		22 37	00 50E		Comp Comp	45 45
	Darks 2, 20, 200, 2000			seconds					

Spectr. Temp. ..... Dome Temp./Hum. 0°C / 80% Transparency Conditions ..OK..... 232...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -1°C / 90% USING ECHELLEX from FORTRAN3.2

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Cross Grating Program	Remarks	Quality
8931,8					1.540	45u	1570/2000	600	1200, 9348	Cross suppose Pola 3571	
3792							1585/2000				
8990							1751/2000				
9,500							1704/2000				
37 exts for Comp			(3 exts 500)				2711/2000			Comp OK Some bad comps in noisy	OK spectra
775							3271/2000				
1714		0.68	G6 III G2 III				914				
2014							1554				
53,00							2200			time to adjust Lamp	
53,108							2166				
54470							2171				
2709							1115				
2257							1219				
							(29/1000	Last one)			

233 Tues-Wed

Date JAN.5-6.'88 Observers Bln-Tn

1.83, 0.30 $1\frac{1}{2}^{m}$ 69° Emulsion Batches: IIa-e JAN 4/88

2.43, 0.10 IIIa-e-fy 24 Nov. 87 23 hrs in gas

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50193	HD 27484	03 31.8	+00 05	17 40	18 26	02 29 E	+00 33	FeNe Clear	1-1
50194	HD 37468	05 33.7	-2° 39'	18 36	19 50	03 06 E	-02 26	FeNe Clear	2-2
50194T	Spot Calib	for	50194 : 50197			15 min @	17.5V D4 3900	15V 4300	15V 4810
50195	HD 36485	05 26.9	-00 22	~~19~~ 20 ~~56~~ 18	23 23	00 40 W	-00 07	FeNe Clear	H-1
50195T	Spot Calib	for 50195	+ 50193 + 96&98			15 min @ 15V	D4 3900 D3 4300	D2 4810	
50195F	Focus test					00 00	-0007	FeNe Clear	4-2

Spectr. Temp. +15°f ..... Dome Temp./Hum. -12C/70% Transparency Conditions ... V. gusty but fair .....

Focus ... 404-405 .....

Spectr. Temp. +11°f ..... Dome Temp./Hum. -14°/75% 234

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
×3,500 4206 19490	v Bad	4.85	F8 V	BC	830/40.2	BS	IIaO-e	1	std Vol	(Grating tilt G=4290)	OK
	poor	360	09 V	BC	830/40.2	BS	IIIa-J+E	1	VB-131u	2 sec comp gives 1942 cnts	fine
							IIIaJ-E			HOS 4241 B = Hemyphot but curtailed	no fog v v
5000 5600	poor	6.70	B2 V p	BC	830/40.2	BS	IIaDe	1	Ho Rich	1 sec comp = 1500 cnts T = +12°f set 405	fine
							IIaDe				v v
				BC	830/40.2	BS	IIaJ-Eg	1		T = +11°f Set 405	OK

235 Wed-Thurs

IIIaJ this previous night + 5 min @ 68°F

Tn 7½" 69°

Emulsion Batches:

IIIa-E JAN.4.1.88

IIIa-J-efg Nov.24.87

Date JAN.6-7.1.88..... Observers ..L.g.-T.n.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50196	HD 11188	01 44.9	+46 58	17 45	20 30	01 30 W	+47 32	FeNe clear	1-1-1
50197	HD37468	05 33.7	-02 39	20 48	21 13	~~01 39 E~~	-02 26	"	1-21
50198	ADS4241 D	05 33.7	-02 39	21 28	22 40	00 12 E	" "	"	1-2
50198	Focus test					" "	"	"	8-3

Spectr. Temp. +17°f ..... Dome Temp./Hum. -13°C/60% Transparency Conditions ... O.K ..... 236 .....

Focus .... 400 .....

Spectr. Temp. ..13°f ..... Dome Temp./Hum. -15C/80%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
40.10					G 5430						
4,0 45	s=30	7.1	B8	BC	1200/50.7	BS	IIIa-e	1	SB-Ly	Ly hvd problem with Hydrachet hope BS not vibrated	sl wk
20.100											
20.040		36	09V	"	830/40.2	BS	IIIa Je	1	VB-Blu.	T = 14°f Set 404	Fine
2500	OK	64	B2V	"	"	"	IIIa-e	1	VB-Blu.	By testing with Exp meter we can separate this from AB	wk
				"	"	"	IIIa-e	1	13°f Set 404	clouds	OK

slicer adjustment still a problem

spectrum looks like

} central dip looks single but fringes top & bottom

237 Fri-Sat Reticon / Echelle Emulsion Batches:

Date Jun. 8-9, 1988 Observers K.K.-Tan 271, 0.16 5m 68½° III a-J - efq ... Nov. 24/87

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Fld			18 06					
	Flat Fields x4			18 32				Tungsten	2
	Jupiter	01 42	+7°	18 36	1851	0027W	≈+7°	Hollow cath	45 45
	HD 20902	1900 03 17.2	1900 +49 30	19 06 30	1922	0107E	+50 01	"	45 45
	"	"	"	19 25	1940	0049E	"	"	
	Flat Fields	@ same posn as	HD 20902		1950		"	Tungsten	2-2-2 3-3
	HD 20902				2006	0024E	"	Hollow cath	45 45
	HD 34029 Capella	1900 05 09.3	+45 54	20 15	2021			"	45 45
	"	"	"	20 23	2030	0152E	+46 09	"	45
	Flat Fields x4	(at same posn)						Tungsten	10 s 10 10
50199	HD 37468	05 33.7	-02 39	21 01	2128	0114E	-02 26	FeNe Clear	1-2
50199	T Spot Cal	for	50199-201		15 min @ 04	17.5V 3900	15V 4300	15V 4810	
50200	HD 14386 MIRA	02 14.3	-03 26	21 44	2255	0330W	-02 52	FeNe clear	1-2-1
50201	HD 39801 α ORIonis	05 49.8	+07 23	23 23	2333	0033W	+07 34	"	2-2

Spectr. Temp. ..... Dome Temp./Hum. ~10°C/72% Transparency Conditions . Sl. Hazy ~ Cloudy 238

Focus .....

Spectr. Temp. ...19°F..... Dome Temp./Hum. -10°C / 90%

Echelle slit cross grating

Exp. Mtr, no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	~~P.H.~~ Height	Program freq / tilt	Remarks	Quality
						.275 ~~15u~~	2415/1000	600u			
							214/1000		1700/4348		
~3500					1.680	.281 50u		600u	H γ ammon. ora		
548							965/1000				ok
617	ok	V= 1.79	F5 I6				1300'				ok
607							1305				
Sun = 4914											
612	OK	V= 1.79	F5 I6								
1015		0.89	G8 III				1300'				
										Dark (sky) done after	
Blue filter 20 310 21768	ok	3.51	09 V	BC	830/402	BS	IIIaJ-cfg	1	VB B/n	[Dark at very end 1200 secs x2] Set 404 T= +20° f/6 * f-ratio RKS	sl. str
							"			(prob due to jarring of scope during exp)	v.v
7682 8750	so so	V=* 2.0	gM6e	BC	830/402	BS	IIIaJ-cfg	1	Intermediate Obs prog	Comp spec * B = 3.6	good
32000	"	V=* 0.80	M2 I+b	"	"	"	"	1	"	B = 2.66	strong

239 Wed-Thurs 7min Dev @ 68°F Tu

Emulsion Batches: ..June.....Oct 27 1887

Date .JAN. 13-14 1888.. Observers .....J.H.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50201 F1	Focus & Exp	Test		20 20	20 33	02 10 W	+38°	Fe Ne Clear	180
F2	"	" Fe Arc + diff (#5 source)						Fe arc + diff	20 10
T3	Test exp	Fe A + diffuser		20 55	(#1 source)			Fe A + diff	600
T4	" "	Ti Ne + diffuser			(#4 source)			Ti Ne + Diff	1200

Spectr. Temp. +21.0°F ..... Dome Temp./Hum +11.0°F/72% in Dome Transparency Conditions ... Smeary ... but clearing/seeing ...

Focus ... 399 .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

240

Exp. Mtr. blue C. filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7093 → 7145	~~spotty~~ (comp à 8 min)			BC	G=5430 12mi/150.7	BS	IIaO-e	1	"	focus ok Diffuser- OUT	tear [illegible]
10.088 4i.912				"	"	"	"	1		focus Diffuser IN	ok, red sl wake
1082				"	"	"	"	1		" "	good
1265				"	"	"	"	1		" "	good
									Note- B tilt at comp time as there is on next night.		

241 Thurs - FRI Dev Jan 15 5 min @ 68°F TH 255,020 Emulsion Batches: Mas.-etg. JAN 6/88 25 hrs

Date JAN. 14-15/88 Observers TH

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50202	miRA HD 14386	02 14.3	-03 26	17 59	19 39	00 36 W	-02 52	FeArc Clear	4-2664 7-3917 4-2401
50207T	Spot Calib for 50202 -06				15 min @ DH	17.5V 3900	15V 4300	15V 4810	
50203	HD 37468	05 33.7	-02 39	19 44	20 39	01 42 E	-02 26	FeArc Clear	4-2660 7-3555 4-2050
50204	HD 39801	05 49.8	+07 23	20 49	20 59	01 36 E	+07 34	FeArc G- Clear G-	2905 3500
50205	HD 62509	07 39.2	+28 16	21 08	21 21	03 05 E	+28 13	FeArc G- Clear 5- 7	1500 1115 3131
50206	HD 47105	06 31.9	+16 29	21 35	21 47	01 33 E	+16 36	FeArc Clear	3754 6500

Spectr. Temp. +10°F Dome Temp./Hum. +5°F/16% Transparency Conditions ... O.K. ... Cloudy from S.S.W

Focus ... 405

Spectr. Temp. +10°F Dome Temp./Hum. +5°F/18%

242

Exp. Mtr. Blue f/Ha	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5 500	So So	3.8	gM6e	BC	G 4240 830/402	BS	IIIa-J-Hy	1	Obs Pgm	Severe RH oscillation and	SR
5,000							IIIa-J-Hy				vv
16,510											focus flex ?
16,580	poor	3.51	09V	BC	830/402	BS	IIIa-J-Hy	1	VB_Bln		str
14 045	OK	2.66	gM6e	BC	830/402	BS	IIIa-J-Hy	1	Obs Pgm		OK
7,200											
7,144	OK	2.14	K0IIIb	"	"	"	"	1	Std_401		OK
21,112	OK	1.9	A0V	"	G=5430 1200/500 7	"	"	1	Hsm Sp Hk	Set 401 T=+10°F	OK
							Note	All	Comp lens	Tilted severely	
							Note During the day Jan 14, Fiber guide was				
							inserted a BC Reinstalled. Something changed				
							in BS tilt no doubt.				

243 Fri-Sat Reticon Echelle Work

Date ...JAN.15-16/88. Observers ...Jm.-KK..... Page #1

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat 8secs, ~~4secs~~,		Near Jupiter				Tungsten	Tungsten	8sec
	4secs.							"	4
	4secs.							"	4
	JUPITER			1800	1817	W		Hollow Cathode	30sec
	"			1817	1827				
KK-Jm->	JUPITER				1857			Comp H Cathode	~~5sec~~ 60
	HD 20902	03 17.7	+49 30	1907	1919		+50 00	Comp H Cathode	60
	HD 20902	"	"	≈1923	1941	00 22E	+50 00		60
	Flat Fields x7	10 secs						~~H Cathode~~	~~60sec~~
	HD 20902	03 17.7	+49 30	1954	2008	00 05W		H Cathode	60sec
	"	"	"	2011	2033				60sec
	Zeta Per HD 21398	03 52.8	+35 30	2039	2125	W		Hollow cathode	60
	Flat Fields x4			2130					
	HD 48915	06 40.8	-16 35	2141.5	2144.5			Hollow cathode	60
	"	"	"	2147	2157				
	Flat Flds (strong) x4								30sec

Spectr. Temp. ..... Dome Temp./Hum. 120°F / 8% Transparency Conditions ... Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

244

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt (Echelle)	Slit	Emulsion (Exp)	Slit P.H. Height	Program (Actual CROSS GRAT TILT)	Remarks	Quality
3889, ~~1754~~						50μ	2560/4000				
1754							1154, 2000				
							1097/2000				
500										(Picket Fence) Spoiled 3194/4000	
313							490/1000				
305				3700/3930	1.68	50μ	208/1000	60μ	0.4239		
504							1-9			(Flat Field 1974/2000)	
750							795/1000				
					1.670	50μ		60μ	0.4294	.4255 Predicted ~~Echelle 1.670~~	
492					"	"	416/1000	"	"		
758					"	"	629	"	"		
300		4	07		"	"	768	"	"	same cloud	
							594/1000	"	"	Sirius	
756		-1.5	A1 V				1021	"	"		
2507							3800	"	"		Very red
12,000							(3500-3600)	"	"		

245 Page #2

Emulsion Batches:

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Field (Spot Light on Saconday Cover)				23 45	0 0	Plate Center	Spot light	
	Dark	1000 secs			23 51	No good	"		1000
	Dark (~~Repeat~~)	1000 secs	After top up ~ 3 "B"s		~~00 07~~		"		1000
		T = -0.560 @ Begin		00 23	00 40	0 0	"		1000
	Dark (after 2 "B"s	T = -0.038 @ "		00 41	00 58	0 0	"		1000

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~ Exp Counts	P.H. Length Slit	~~Program~~ CROSS Tilt	Remarks	Quality
1803					1·67	50μ	2094/4000	600	0·4294		
	Dark Slide in & Dome Dark				"	"	"	"		not kept.	
					"	"		"			
E-40.1300	end				"	"	194/1000	"	Note @ end	of Flat Field & Inotical temp	
E	@ end				"	"	79/1000	"	reading @	-1·236 ~~no further~~ top up done)	

247 Thurs Fri Echelle WORK

Emulsion Batches: .....

Date JAN 21-22/88 Observers Jn. — A.G. (Adina Gershon) .....

.....

Plate No.	Object	R.A. 1900 1988.6	Declination 1900 1988.5	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Fields x3	(Too Strong I think)				E	+40°	Tungsten	4 4 3 3
	EPS PER A	03 57.1	+39 54	19 39	20 04			Hollow Cath	30 30
	ALP ORI	05 54.4	+7 30	20 17	20 44		E +7 35	Hollow Cath/Ne	30 30
	Flat Fields x4						11	Tungsten	2 sec
	T = +240	Top speed up @		21 hrs.	after Flat Fields				
	HD 48915	06 40.8	-16 35	21 23	21 31	E	—	Hollow Cath/Ne	30 30
	11	11	11	21 39	21 51	E	11	11	45 45
	11	11	11	21 56	22 04	E		11	45
	Flat Fields	at this location x3 (10 secs, 8 secs, 12						Tungsten	
	HD 48915	06 40.8	-16 35	22 48	07 56		—	Hollow Cath	30 45
	11	11	11	23 08	23 19	00 22W	-16 34	11	45 45
	Flat Flds x3			23 35		11	11	Tungsten	6 1 -6
	DARK ~~Flat~~	1000 secs, ~~600 secs~~							
	Dark		600 secs						
	Checked ~~Grey~~	Order for Cras tilt .3240 - .3290				3275 is best			

Spectr. Temp. ..... Dome Temp./Hum. -5°C /70.6 Transparency Conditions ... OK ... but seeing terrible

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -10°C /80% CROSS TILT

248

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1·670	50μ	3886/4000		3secs-20 TB 4000		
7 only counts	Bad	189	Bor5IV						·3330	Too slow Doesn't Look Good	
500	"	0·5	M2Ic6		1·670	50μ	711/1000		"		
~~1st 6250~~ ~~2nd 5~~ 580							approx 710/1000		"	Used to avoid fastest count Rate	
562	V poor	-1·5	A1V		1·670	50μ	3966/4000		·3330		OK
538	"	"	"		"	"	5305/8000		"		
752	"	"	"		"	"	4927/8001		"		
7000-3000				4000/8000; 3310/8000;			5130/8000		"		
504	poor	-1·5	A1V		1·670	50μ	2992/4000		·3200	ORder 124?	
547							4884/8000		·3205	" "	
							4284 4371 5171		"		
							14/1000		"		
							15/1000		"		

249 Fri - Sat Echelle work

Date ..JAN.22/23/88.. Observers ..John Lester - T.H.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2685	HD19356 B Per	03 01.7	+40 34		1836		+	Hollow cathode	40
	Flat Field x~~3~~ (3)							Tungsten	3 sec
	Parks x3 · 10 secs.								
860L	Flat Field (shielding off bright part of source)			~~21 17~~	(Drive off) ~~21 20~~	0 0	platform	Tungsten	30 sec
	Flat Field (max brightness)				"	"	"	Tungsten	2 sec
	Comp Tests							#011 Cuth	45 sec
								"	
									10 sec
									~~30~~ sec

Spectr. Temp. ..... Dome Temp./Hum. ...../.60.70 Transparency Conditions ..Clouding in..... 250

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exhalla Ex P CROSS GRATING

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	~~Program~~ Tilt	Remarks	Quality
373	poor	V= 2.1	B8V		1.685	50μ	1548/2000		.3330		
1360							1600 per	Field			
930					1685	50μ	1269/2000		.3330		
					1.685		1653/2000				
					1.685		1574/2000		.3330		
					1.675		1732/2000		.3330		
30					1.665		1733/2000		"	} .050 diff in calc'd tilt	
34					1.715		1668.700		"	}	
30					1.635		1554/2000		"		
					1.635 ~~1.660~~				.3300 .3214 ~~.3220~~ .3205	CR Dor 125	
5 sec					1.675				~~.3210~~ ~~.3219~~		
					1.715				.3305		
					1.650		1731/2000		L.3295	L. Woodcock	
					1.650				.3280		

251

Sun

Dev Sun 24 Tmin @ 68°F Tn

Emulsion Batches: ... Old. D.O.S. .....

Date ..Jan 24. 1886.... Observers ..J.H.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50206F1	Focus & BS Tilt test			18 30		0 0	+4°	Fe Ne clear	6 min
								Fe Arc clear	2 min
~~F2~~	~~"~~ ~~"~~	~~"~~	~~"~~				"	Fe Arc clear	20 sec
									10 sec
50206F2	Focus test & BS Tilt test			19 00	19 20	0 0	0600	Fe Arc clear	20
									10
	Note. Before Tests, BS was removed & reinserted cure fully ~~with~~ with								
	cure to rotate & clamp at it's intended Rotatn angle. Upon unclamping								
	at 1st, no incorrect placement was observed. It seems to be correct								
	JAN 25 BS Tests								
50206F3	Focus/tilt tests	CW 30° of original				W	+	Fe Arc clear	20
									10
F4	" "	CCW 60° of original						"	
F5	" "	CW 200° of original (one full thread)						"	
F6		CW 360 from F5						"	
F7		CW ≈330 from F6						"	

Spectr. Temp. ~~+34°F~~ 33.5°F Dome Temp./Hum +32F/90% Transparency Conditions ... Cloudy

Focus ... 397

Spectr. Temp. ... Dome Temp./Hum. ...

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue filter 2,300 2867				BC	1200/507	BS	IIaO	1	diffuser out	Seems too slow	
5394 — Stellar mate H = comp posn. " Comp mate H = stellar posn.				"	"	"	"	1	~~diffuser IN~~	~~Note — This is a Reverse focus test~~	
3497 3400				BC	1200/507	BS	IIaO	1	diffuse IN		
seeing anyway.											
3500 4000				BC	1200/507	BS	IIIaJ	1	Diff OUT	by accident H = +.056	
								1	Diff OUT	" " T = 31F Set 397	+.064
3700 778								1	Diff IN	Fe Arc again	+.043
14000 18000								1			+.019
3600 3000								1	" "		Right ON
									"		
				Note; F5 stellar comp appears tied up with						comp, unlike F3 or F4	

253 Tues-Wed Dew Jan 26 7 min @ 68°F Tn

Emulsion Batches: IIa-O-e Jan 4/88

Date JAN 26/27/88. Observers Bh-Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50207	HD 22484	03 31.8	+0005	18 32	19 20	00 12E	+0028	Fo Ne clear	120 203 90 760 ~~770~~
50208	HD 22484	03 31.8	+00 05	19 26	19 57	00 20W	"	Fo ARC clear	1179 1855
50208F	Focus test			20 00		00 25W	"	Fo ARC clear	@ 10 @ 10

Spectr. Temp. +20°F Dome Temp./Hum. +14°F / 72% Transparency Conditions Semi cloudy

Focus 400

Spectr. Temp. Dome Temp./Hum. +11°F / 88%

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3400 3200	poor	4.85	F8V	BC	1200/50.7	BS	IIa0-e	1	Stlvel	DIFFUSER OUT	exp ok
2343	poor	4.85	F8V	BC	830/40.2	BS	IIa0-e	1	Stlvel	* 7 secs Each of 2 shots DIFFUSER IN T=18°F Set 403	comp str exp ok *
2500 5000				"	"	"	"	1		T=+19°F Set 403	Cent Ref

*note comp for 50208 looks out of focus, but 50208F looks ok Flecam ?

255 pg#1 Reticon on Echelle

Emulsion Batches: .....

Date JAN 28/29/88 Observers ... J.H. .....

Plate No.	Object	R.A. ~~1900~~ /1986	Declination ~~1900~~ /1986	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2,68134	Flat Field x 4	03 57.1	+39 59			01 30E	+40 06	Tungsten	2 3 3 3
200	DARK			18 16		01 20E	"		2
									600 secs
266 C	1st Comp						"	HC	45
									4
332 S	EPS PER	03 57.1	+39 59	18 36	18 57			HC	45
464 S	"	"	"	19 01	19 18			HC	45
662 S	"	"	"	19 24 35	19 51				45
794 S	"	"	"	19 59	20 33				"
	" (Moto slit width increase)		"	20 44 36	21 17			H Cuth	35
	Flat Fields at Same Posn x3			21 21					2 sec 1 sec
	EPS PER A HD 24760	03 57.1	39 59	21 36	22 10	02 28W		H Cuth	30
								Hal Cuth	30
	Dark 5 min			22 17					300
1652 S	SIRIUS HD 48915	06 44.6	-16 42	22 30	22 34		—	H Cathode	45
	"	"	"	22 39	22 46			"	45
	"	"	"	22 50	23 00				45
	"	"	"	23 04	23 15				
	Flat Fields x4			4 secs (6 secs / 5687)		(6 secs / 5802)		(6 sec 5494) Tungsten	

Spectr. Temp. ..... Dome Temp./Hum. +12°F / 65% Transparency Conditions ... Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +8°F / 90%

Exp. Mtr. No Filter	Seeing	Ptg. Mag.	Sp.	~~Inst.~~ ORDEO 2	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
1138							1850				
812				125 4550	1.650	50μ	2408		.3315		
817							2430				
							1610				
							56/1000	For Dark		Not kept	
38	V poor	2.89	B0.5IV				1925/2000			T = −.144	
119	"	"	"				678/1000				
100							408/1000			Looks funny wwww Noisy?	
120				127/4481 ~~4451~~	1.691	50μ			.3330	1478/2000 for 45 sec Comp	
140							687/1000		"	T = +.100	
240	39 cm/s				1.691	80μ	1228/1000		.3330		
							1364/2000				
						80μ	1608				
							1434				
280					1.691	80μ	1279/2000				
					1.691	50μ	36/1000		Dewar Topped up during Darks		
621	V= +1.46		A0	127/4481	"	50μ	3948/4000		.3330		
210							1136/2000				
651							9570/16000				
783							4767/8000			Cloud T = +.200	
							3704/4000	for 4 secs.			

257 pg 2 Dev Jan 29/88 Tu

Emulsion Batches: IIa-O-e

Date Jun 28/29 Observers Tu ANDRIA

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	DARK (2x 10secs)						-16°		10secs
	DARK 10 min								
5020BF2	~~Focus~~ BS Rotn Test		6-fly Comp mode)			0 0		FeHRC Clear	prob too much
F3	Focus & BS Rotn Test					0 0		h	#15 210
Tests Jun 29/88	Dev Jun 29 Tu								
F4	Focus & BS Rotn test.			BS Rotated 270° CW				FeHRC Clear	30 10

Spectr. Temp. +18.0°F ..... Dome Temp./Hum. ..... Transparency Conditions 258

Focus ....403.....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							24/1000, 25/1000				
							25/1000				
				BC	830/407	BS	IIaO-E	1		Fe Arc a problem	Exp's str focus OK
				"	"	"	"	1			
				BC	830/407	BS	IIIa-J	1	Diffuser IN	Set 400 T=23°F	

259

3+, 0.52, 0.39 5m 68° 1.68, 0.24

Emulsion Batches:
IIIaJ-e fg ... JAN.6/88. 25hrs
IIaD-e ... JAN.4/88
...

Date 1988 FEB 2/3 ... Observers Blu-Tn ...
TUE/WED

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	*	Exp.
50209	HD 37468	$05^H 33^M.7$	$-2° 39'$	18 04	19 36	01 30E	$-2° 29'$	Fe Arc		1135
					17.5V	15V	15V	Clear		1392
50209T	Spot Calib for	50209		15min@	D4 3900	4300	4810			1100
50210	HD 36485	05 26.9	-00 22	19 43	23 36	02 37W	-00 09	Fe Arc		1000
					D4	D3	D2	Clear		1030
50210T	Spot Calib for	50210		15min@	15V 3900	4300	4810			1200

Spectr. Temp. ..31.°F..... Dome Temp./Hum. 20°F./80% Transparency Conditions Poor: Lots of Cirrus 260

Focus 400

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B Filter 20026 20010	poor	36	09.5V	BC	830/40.2	3S	IIIa-J e/y	1	SB-Bln	* Comps 7sec 12sec 7secs FE	Arc Sl Str Exp OK
							IIIa-J e/y				✓✓
3000 3040	poor	6.70	B2Vp	BC	830/40.2	3S	IIa O-e	1	He-Rich	* 8-10-? Comps ~~3-5~~ secs somewhat	Fe Sl Str Exp OK
							IIa O-e				✓✓

261 Thurs-Fri Reticon/Echelle Tests

Date Feb 4-5/88 Observers T.m. + Andria

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	Focus tests	Ideal focus found for this dome temp + this dispersion							
	went From .250 → .350	on focus adj. to max signal and min pixel number.							
	Flat Fields x 2	(4secs, ~~6secs~~,						Tungsten	4 sec
		6secs.)						"	6
	Comp							H Cath	60 sec
	Dark	1200 secs,							
	Looking for ideal for λ4471 centered, since Eps Per has stronger 4471 but weak 4481							H Cath	30 sec
									4
									1
Flat @ Cross .3357 9 secs		45 sec Eps	.3335	OK 1969/2000					4
	.3362 9 secs		.3348	4471 at Red str					4
			.3357	OK.					4
				prob ideal for λ4471					15 sec
									30
	Comp (kept)								30

Spectr. Temp. ..... Dome Temp./Hum. ...10.°C./60% Transparency Conditions ...Cloudy after 11 262

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Note. I changed H mic Reading from .208 → .205
Feb H=60% = .205

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~ Exp	P.H.	Program	Remarks	Quality
				127/4481	1.691	269 80μ			.3330 ~~.3280~~	Ideal Focus T=-10°C Focus Set @ .290	
									.3320	Note - (Cross set @ .3325	
5439 ~~0235~~				127/4481	1.691	50μ	349/4000		.3342	Maximises 4481 signal, but	
4335				"	"	"	5562/8000		"	Cross @ .3342 gets OK 4481	
62				"	"	"			"	and Blue to Red ends as well)	
				"	"	"					
				127/4471	1.750	50μ	628/2000		.3340		
				"	1.760	"	1153		.3350		
				"	"	"	1161		.3360		
				"	"	"	379/1000		.3370	No good - Too far off	
				"	"	"	1153/2000		.3355		
				"	"	"	1220/2000		.3347	Blue wk @ 4471 too Blue one weather	
				"	"	"	194/1000		.3365		
				"	"	"			.3380	Melting	
				"	"	"	979/1000		.3330	~~Kept~~ Kept	
							89/1000		.3320	no good too wk	

263 #1 Echelle Tests

Date Feb. 5-6/88 Observers Tm

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Field			18 30				Tung	6
									6
	1.700	.3315							6
6 secs all	1.700	.3340	5737						6
	1.700	.3350	Red cutoff						6
	1.700	.3320							6
	1.700	.3340							6
	1.680	.3340	Red cutoff		Near (faster) posn of source			Tung	4
	1.680	.3330	5791 Red	cutoff → Red end.					
	1.680	.3335							6
	1.680	.3325	6705	Cutoff is blue					6
	1.680	.3315	7643	blue cutoff → Red					6
	1.680	.3328	6531	Ideal for this Ech Tilt					6
									4
									4

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt (Echelle)	Slit	Emulsion	P.H.	Program (CROSS)	Remarks	Quality
5055				* 1200, 4971	1.760	50μ	3794/4K		.3362	* Prompts CROSS to .3395	
5004							5013/8K		.3350		
4994							4841/8K		.3340		
50030		(Note 1.800 is ± max Adj to Echelle grating tilt)					4423/8K		.3355		
5172							3486/14K		.3367	Slump Reduced off	
5120							5247/8K		.3345	nothing @ .3380	
[illegible]									.3330		
5694							4232/8		.3347		
									.3358		
					1.740		5207/8		.3356		
753					1.800		6093		.3358	Jobed for this plate	
300					1.800		1951/2K		.3375		
					1.720		6785		.3330		
					1.700		5095		.3320		
					1.700		2676		.3340		

265 #2

Emulsion Batches:

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flats			21 30					6
									6
									6
									6
									6
	Comp at Red end							H cath	45
	Comp at Blue end							"	45
	Flat								7

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 266

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Slit H now 500μ = .215 micrometer set

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6sec	7308				1200, 4471	1.680	50μ	6047/8K		.3328		
6						1.600		6224/8K		.3308	slow cutoff @ blue	
6	340					1.600				.3315		
6						1.600		7209		.3303		
						1.790		5568		.3360	blue wk	
						1.790		5685		.3354		
						1.600		7205		.3308	Region of	
6	579					1.600		6890		.3320		
	667					1.600		7399		.3315	blue cuts out	
	707					"		5277		.3325		
						"		6250		.3322	OK for Related order	
45	40					"		1735		"	T = -11°C in dome	
45						1.790				.3365		
	7					"				.3357		

267

Date Feb8-9/88 Observers T.n

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat							Tung	6
	"							"	6
	Comp							H Cath	30
	Comp							"	30
	Flat							Tung	6
	"							"	6
	"							"	6
								"	6
								"	6
								"	6
								"	6
	Flats for HD48915							"	5
	HD48915	06 44.6	-16 42	21 12	21 25			H Cath	
	"	"	"	21 28	21 39				

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... 268 .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... H= .210 = 50 μ

Exp. Mtr. no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7398				1200,4550	1·790	·281 50μ	5074/8000		·3355	50 y's ·3209	
7431				"	1·790	"	4806/8K		·3330	going for order 125	
13				"	"	"			"		
13				"	"	"	2444/4K		·3225		
									·3220		
6734				"	1·790	50μ	6378/8K		·3240	Red cut off	
7250					1·750	"			" "	Red cut off to blue of previous	
6445					"	"	6739/8K		·3230		
7715					"		7406		·3225	up & down	
7176					"		7259		·3218	better not so up & down	
7305					"		6654/16K		·3210		
7406					"		8735		·3203		
2500				1200/4481	1·650	50μ			·3315	H=400μ	
600		V=146	A0	"	"	"			"		OK
750							3578				

269 pg2

Date Feb. 8-9/88. Observers KK. T.M.

Emulsion Batches:

Plate No.	Object	R.A. 1900 ~~1865~~	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	HD 47105	06 36.9	+16 25	21	22 07	00 26W		Hg+4	45 45
	Flats @ this posn			x4					
	Flats @ " "	snow	W:H	x3					
	HD 47105	06 36.9	+16 25		22 39	"		Hg+4	45 45
	"	"	"	22 44	22 59				45 30
	Darks 10, 100 secs, 1000 secs				Picket fence effect on this 1000 sec dark				
	Dark 1000 secs				23 51				

Spectr. Temp. ..... Dome Temp./Hum. -10°C/85% Transparency Conditions ..Hazy - Cloudy.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -12°C 95% 270

Exp. Mtr. no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
100	V POOR	1.9		1200/4981	1.650	45μ			.3315		
888, 1091, 1085											
1643, 60				1200/4481	1.650	60μ				W=60μ=.277 H=60μ=.205	
200				"	"	"			.3315	small plated fence effect	
50											
150				"	"	"	577/1K		"		
							33/1K				

Junk

271 Wed-Thurs

Dev Feb13 5min @ 68°F Tn

Emulsion Batches: Ilford Ref. JAN 7 6/88. 25hrs 3+, 2.51, 0.40

Date Feb 10-11/88 Observers Ly-Tm

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50211	HD37468	05 33.7	-2 39	18 26	19:40	00 55E	-2 29	FeARC Clear	15 sec 15 sec
50211T	Spot Calib for 50211			15min@D4		175V 15V 3900 9300	15V 4510		
Feb 15-16	Echelle Tests,								30sec
	A cathode								
	"								
	"								
	"								
	"								
	"								
	Flat x2	3sec, 3sec,							6
	Comp								45
	Flat								3
	Comp								45
	Flat								3

Spectr. Temp. 22°f Dome Temp./Hum. 410°F./60% Transparency Conditions O.K. 272

Focus 402

Spectr. Temp. .... Dome Temp./Hum. /

BS installed; no further Roth adj tonight. will measure G8-612 more before adjusting further

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
38270	So So / OK	3.6	0945 J	Bc	G 4240 830/40:2	BS	IIIaJ-eFG	1	SL-Blu	* Prob too much comp Diffuser IN → cloud.	
					Ech Tilt	.277	IIIaJ-eFG cuts				vv
10					1.630	60μ	1265/2K	H-550μ .210	.3250		
							1152		.3260		
9							1379		.3240	4510 wk	
							1231		.3255	4510 OK good show!	
							1352		.3245	4510 wk 4545 str	
							1246		.3253		
							1112		.3263	OK	
1503 617	1					.277 60μ	2180 2212	1=600 .205	.3263	very fluty	kept
5						n		n	n		kept
					1.680		2458/4K	n	.3280	OK	
					1.730		1171/2K		.3295	ok	
3250							1974/5K		.3295	blue wk	
506							3043/4F		.3290	.3303 too high (wk)	
500							3059		.3285		

273 Echelle Tests

Date Feb 15-16 1886 Observers Jm

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Comp								30
									30
									30
									30
									30
									30
	Flat								3
	"	2 pictures in a row.							3
									3
	Comp								45
	"								25
	Flat								3
	Comp								25

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30	22	at Blue end of				1.790	60μ	262/IIK		.3320	too wk	
30	23	ORDER 126						527		.3313		
30	23							775		.3307		
30	23							834		.3300		
30								880		.3295		
30								942		.3290	Red end much stronger now ie λ9510	
3	5053							3177		.3290		
3	5035							2700		.3300	blue wk	
3								685		.3315		
45	34							797/IIK		.3315		
25	18							763/IIK		.3288 — .3288	prob str signal	
3	787											
25	18							592		.3280	Finally weaker now	

275

Dev Feb 16/88 5 min @ 68°F Tn

Emulsion Batches: IIaS ... old ... Jan 6/88
IIaO-e ... JAN 4/88 ...

Date . Feb 16.17.88 .... Observers .... T.n .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
50212T1	Full apperature Comp exp			≈ 18 30		01 37 W	+30° 42	FeArc Clear	1A sec
T2	" "	"	"			"	"	"	5 sec
T3						"	"	"	3 sec
T4						"	"	FeArc A 1/2	4 sec
F1	Focus test			21 35	21 45	"	"	FeArc Al 1/2 Clear	Lots ≈ 10 sec
Slit Ti Hs	Top Rel to bottom from mid comp lines								
50212F1	−.0025 in								
T3	−.0020 in								
T4	< −.0010 in								

Spectr. Temp. ..28°f..... Dome Temp./Hum. ..... Transparency Conditions .....276.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. K FILTER	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6428				BC	G-5430 1200/50.8	150μ	IIIaJ	1	Set 398	Small diaphragm for slit in	Str
1847				"	G4240 830/40.2	"	"	1	set 400	" " "	S/str
2255				"	"	250μ	IIaO-e	1	"	T=+29°f " "	str
~~3798~~ ~~3644~~				"	G 5430 1200/50.8	250μ	"	1	"	" " "	V s/str
1244 ⇒ 349	(some FeNe also) (only Fe arc)			"	"	150μ*	"	1	Set 397.5	" " " cast s/Rel	Focus ok Comp s/wk

* proper stellar spect decker installed now.
T1 & T2 had experimental decker in place.

Note Fe Arc count Rate somewhat erratic. Go by exp meter counts as a guide

Note Off hand from comparing exps with same slit and if we can go by Exp meter counts then 1200 l/mm grating is ~~by~~ somewhat less efficient than 830 l/mm grating in the blue. Compare exps 50207 and 50208 to check with stellar exps. 1h

277 Thurs-Fri Echelle work

Date . Feb. 18-19.1888... Observers ... Tu. (Kth Fr. Ibr.) .....

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	Comp for Stellar exp (Durtis done earlier) by Kth						+16	Pl Cath	35
	HD 47105	06 31.9	+16 29	18 46	19 07	E		H cath	35
	"	"	"	19 11	19 35			H cath	35
	Flats x4 in HD 47105 posn								
	Flats x 4 for Sirius								4 sec
	1st Comp for Sirius							H cath	35
	HD 48915	06 40.8	-16 35	19 53	19 57			Th-A	35
	"	"	"	20 00	20 04			Th A	35
	HD 39801	05 49.8	+7 23	20 12	20 21			Th A	35
	"	"	"	20 25	20 43				
	Flats for HD 39801 x 3							Tung	1 sec
	Flats for HD 58715 x 4							"	1 sec
21805	HD 58715	07 21.7	+08 29	21 03	21 32,	0018 E	+8 26	Th A	35
23785	HD 87901	10 03.1	+12 27	21 49	22 06	0225 E	+12 08	Th A	35
25105	"	"	"	22 09	22 41	0130 E	"	Th A	35
	Flats for HD 87901 x4					"	"	Tung	4

Spectr. Temp. ..... Dome Temp./Hum. 34.7/.56.6 Transparency Conditions ..Sl. hazy..... 278

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Echelle

* Note Ech Tilt = 1.620 should be Mid order for our system

Coded > 4493

Exp. Mtr. No filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	~~P.H.~~ X-grtl	Program	Remarks	Quality
21					* 1.620	60μ	1072/2K	.3328			
396	very poor	1.9	AOIV	ORder 127			2325		Asym Sp		Fair
~~450~~		1.9	AOIV				~~2448~~				Fine
2129 2100)							0000 1944				
2485 ?)							2400 ?				
5100 5366)											
5000 ~~4417~~ 4950)							4417 4486				
~~847/1000~~							847/1000				
5005	OK	1.5	AOm				6094				
1000		~~1.66~~	~~m2I.6~~								
395		2.66	m2I.6				782/1K				
340										Picket fence off!	not right
567 878							1058 1054				
~~885~~ 1051											
856 992							1000 1033				
798 690							961 1038				
112	* good	2.8	B8V				997/1000			* seeing RA oscillate Seeing going to poor	
400	50 50 ~~bk~~	V= 1.36	BIV				2619			Flat looking	
800	poor	V	"				~~4978~~/8K				
5376 3171)							4231 4189 / 8K				
4207 5951)							4179 4724				

279 #2

Emulsion Batches: .....

Date ..... Observers ...T.H.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Flds For ↓	(@ HD97633's Position)		0254					2sec
	#1 Comp for ↓							Th-A	35sec
32365	HD 97633	11 09.0	+1559	2302	2352	E	+1536	Th-11	35sec
	"	"	"	2354	0024	0114 E		Flint	35sec
	Park while topping up								300
35005	HD 97633	11 09.0	+1559	0057	0133	0005E	+1535	Th-A	35
36985	HD97603	11 08 47	+21 04	0138	0205	0027W	+2041	Th A	35
38965	HD97633	11 09.0	+1559	0213	0254	0116W	+1536	"	35
	"	"	"	0258	0346	0208 W	"	"	"
	Flat Fields x 4 @ this posn.			1,1,1.5,1.5 secs			"	Tungsten	~~45sec~~
	Darks x2 180sec (16/1K real clean)				180sec		"		

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Fine ... 280

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Signal Emulsion	P.H.	Program	Remarks	Quality
2058 1555				1200/4493	* 1.620	60u	0192 2161	13328			
22							958/1K				
104	30 sec → OK	3.3	A2V				* 2090/14K			Strong wind, narrow slits through * Picket fence down. kept	
100	OK	"	"				794/1K		Note During previous exps I noticed outside monitor Flash brightly once. I wasn't pushing any buttons either. I wonder if it is related to noise problem.		
							30/1K				
123	good	3.3	A2V				1046/2K		No sep Flats because I only moved 5° in dec (slowly)		
138	"	2.68	A4V				1015/2K			Flat	
187 *	"	3.3	A2V				* 867/1K			* why 867 cuts? cloud thinly	
105	fine	"	"	"	"	"	864			cloud thickly	
918 1820 947 1387							827 1513 882 1261				

* Note. perhaps grating tilt was 1.630, as it is Feb 24 Tu

281 Tues-Wed

Date Feb 23/24/86. Observers KK-TH

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	Seton Moon & Capella entire image on Fiber feed hub - notable to see notches in moon or capella								
	Capella with Spectrometer fiber feed. Image with b/l seeing s/l larger than feed circle								
	Flat Field	10 sec	ideal	in normal 37500 spectr posn					
	Echelle Reticon Tests (Looking for Ideal setting for λ4560 centered								
	Flat Field							Tung	4
	"							"	4
	"							"	4
	"							"	4
	"							"	4
	"							"	4
	Comp							Hcath	30
	"							"	40

Spectr. Temp. ..... Dome Temp./Hum. 25F / 60% Transparency Conditions 282

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... XB

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Vella		Image.	Gap between wedges is ≈ width of star image with bad seeing										
el Circle		Image.	High background noise (indicator lights on Power supplies?) not starlight (Yes, we blocked them out and Reduced background)										
		2000/											
							Echelle T	H=600		X grating			
							1630	60μ		3310		ORDER 127 centered on 4493Å	
							"	"		~~3205~~ ~~3230~~	ORDER 125 λ4560	Red wk	
9	4	5226					"	"	5436	3195	"		
7	4	5163							5965				
4	4	5508							5845	3190			
11	4	5423							6544	3185		Comp ok Too 1177/2K	
VI	4	5100							5687	3178		Comp Blue end wk	
VI	4	5150							6670	3187		Ideal I think	
VI	4	5704							5569	3193		Red getting wk	
Cath	30									3193			
VI	40	~~21~~ ~~30~~								~~3251~~ 3187		Printed	

Note: Not many "picket fence" patterns.

283 Wed-Thurs Echelle work

Emulsion Batches: .....

Date .. Feb. 24-25/88 Observers .... T. M ....

Forgot to correct PC Time .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Fields x 4 On Regulus						+12 08	Tungsten	4 sec
1st	Comp Regulus HD 87901	10 03.1	+12 27	00 11	00 28	0 25 W	+12 08	H Cath	30
	HD 87901	"	"	00 29	00 42 40 Clock 00 40 13 PC		"	H Cath	30
	Dark ~~Lamps~~ 5 min			Done nowhere near pos'n of Regulus		02 00 W	+30		

Spectr. Temp. ..... Dome Temp./Hum +18°F / 90% Transparency Conditions . Semi...c.loudy..... 284..

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

* Note PC Time Behind ASTO EST Time By 2 min 27 secs

Exp. Mtr. no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2553 2412	2525 2580				1.630	60u	5052 5038	5090 3110	ORDER125	centered 4560Å	
28					"	"	1438/2K		"		
280	v Bad	V=1.36	B7U		"	"	1403		"		
129					"	"	777		"	Snow	
	Much "Picket fence" stuff with darks						18/1K	can't seem to get any without "picket fence" effect?			

285 Mon-Tues Echelle Reticon

Emulsion Batches: .....

Date . Feb 29/Mar 1/88 Observers . T.n.-Fds./KK..... .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Fields x2							Tungsten	6 sec
Comp for	HD 24760			~~18~~				Heath	~~30 sec~~
2005	HD 24760	03 57.1	+39 59	18 50	19 04	W		Heath	~~30 sec~~
	RIGEL HD 34085	05 09.7	-8 19	19 12	19 25			Heath	30
	"	"	"	19 29	19 42				
	"	"	"	19 46	2007				
	Flats x2								7 sec 11 sec
	Flats x2	for SIRIUS							11 sec 15 sec
	SIRIUS HD 48915	06 40.8	-16 35	20:30	20			Heath	30
				21 08	2112	(picket fence obs)		Heath	30
				21 13	21 15 43				
					21 22 21				
	Dark x3							Heath	30. 300 sec

Spectr. Temp. ..... Dome Temp./Hum. -5°C / 52% Transparency Conditions .... thin cloud ..... 286...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -10°C / 90% exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. × H/t.	Grating/ Tilt	Slit H=500μ	Emulsion	P.H.	Program	Remarks	Quality
1064							950/11K				
1051				3187	1·630	60μ	973/11K		OR/OR125		
11											
~~1718/31~~							1718/2K				
	✓poor						"picket fence"		discarded	Too slow: curtailed	
120	"	½	"picket fence" effect				(kept though)			1st comp had ½ picket fence effect.	
190	"	0.0	B8Ia				1766/2K				
301							3500/4000.				
1133							1324				
1774							2116				
1808							2093				
2613											
197		-1.5	A0m	3187	1·630	60μ	(Picket fence → discard of 1st attempt)				
264							(1906) 2nd one has "picket" effect too - discarded (1912) 3rd one OK				
126							1806				
165											
60sec, 60sec							33, 98				

287 Tues-Wed Echelle Reticon Work

Emulsion Batches: .....

Date Mar 1-2/88 Observers TH

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat Fields x4 @ Rigel's posn + One long (35sec)							Tungsten	15, 15
								H Cath	11, 11
398S	Rigel HD 34085	05 09.7	-8 19	19 08	19 15			"	45sec
530S	"	"	"	19 19	19 29			"	45
662S	"	"	"	19 35	19 43			"	45
	"	"	"	19 46	19 58				45
860S	SIRIUS HD 48915	06 40.8	-16 35	20 11	20 17				—
926S	"	"	"	20 18	20 21.30				
992S	"	"	"	20 26	20 29				45sec
1124	"	"	"	20 32.30	20 40				—
1190	"	"	"	20 40.30	20 51			H Cath	45sec
1325	"	"	"	20 59.30	21 04				
1386S	"	"	"	21 05.30	21 09				45sec
	Flat Flds @ Sirius's posn			25sec, 35sec, 45sec					45sec
1784	Regulus HD 87901	10 03.1	+12 27	21 27	21 41				
1850	"	"	"	21 43	21 55				45sec
	Flat Flds x2			30sec					

Spectr. Temp. ..... Dome Temp./Hum. 11°C / 48% Transparency Conditions Some cloud 288

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -10 / 70% counts

1st comp attempt had "picket fence" effect (No changes to slit or Tilts from previous night)

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. Tilt × grating	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	no filter		*					950 654	*			
	29 c t	2034									(1st Long Flat had picket fence 35sec)	
	24 c t	2085	7,500		.3187	1.630	60μ	901.658	2388	ORDER 125		
45	33										[1st 5 half pickets 19:01 → 19:07]	
45	365	SOSO	0-0	B8Iq				1709/2K				
45	363	"						1550				
45	312	OK						1206			guided on LHS of slit	
45	328	SO SO						———			" " RHS Picket fence Discarded	
—	286		1-5	A0m				1310			guided on RHS of slit	OK
	295							1169			" . LHS of slit	Blow out OK ?
45	751							3893			(Center guided	Blow out
—	285							1102			Guided on LHS	
45	388							2101			" " RHS Clouds too (Picket 1st & last) discarded	
	567							2274	✓		Guided L of center	
45	?							?			center guided	
45	3765,	—,	11182					1042, 1515, 2057				
	328	OK		Darks ×3 & end 300sec				1699			center guided Near moon ≥ 10°	
45	302			600sec dark attempt was 2 fences				1118			Guided on	
	7383,	7930						1135, 1264			one picket fence 30 sec	

289 Thurs-Fri Shectograph ~~int~~ Emulsion Batches: .....

Date MAR 3-4/88..... Observers J.n. + Andria..... .....

600sec + 1200sec + 1200sec.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
734	HD47105	06 31.9	+16 29	20 14 29	21 07 36	W	+16 32	FeNe clear	60sec ~~60sec~~
	" } Same Int	"	"	21* 20 40	21 41 23		"	"	
748.TST	} Same Int	"	"	21* 43	22 03 26	02 00W	"	"	40sec
	9 LEO AB HD83808	09 35 49	+10 21	22 15 36	22 35 36			"	
750.TST	" Cont			22 36 33	22 56 31			"	~~40sec~~
	Last Comp	@ 23:02							40sec
	Flat Field							Tungsten H=1/4	2 270
	Flat Field	600 secs Total						Tung H=1/8	300 + 300
	Dark	300 secs (Cap, ie last covering to be removed first) Lights out							300
	Dark	3600 secs							

Spectr. Temp. ..... Dome Temp./Hum. -6°C / 60% Transparency Conditions Part Cloudy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... * Cooling Bath temp @ 18:30 = +4.9°C
Just int in "A"
PCS PC clock ≈ 30 sec ahead of Astro clock

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
120-150 / 5-15	3050	1-9	AO IV	PCS	1800/45°	120μ	* 3990Å		Jut in A cnts = 30/sec	* λ = 3860Å Very cloudy	
100-150 / 6-10				"	"	"	"			* Astro clock time Still V cloudy	
70-90 / 7-12				"	"	"	"				
* 2-5 / 5		4.0	A0+ FGD	"	"	"	"			* A cnts 25-150/sec V cloudy	
0.. 150 / 5-10	POOR	"	"	"	"	"	"			cloud thinning now	
800/50				"	"	"	"				
750/88				"	"	"	"				
720/25				"	"	"	"				
1-7/0-5											

291 FRI-SAT Shectograph

Date MARCH 4-5/88 Observers Tn-Kk-~~Shenton~~

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
	Flat Field			~~2~~ 18 hrs		0 0	near platform	Tungsten A=1/8	1800
	1st Comp							FeNe Clear	50
	16 ORI HD 33254	05 03 50	+9 42	*19 06 20	19 ~~*H 38~~				~~30~~ 5
	HD 47839	06 35.5	+09 59	19 46 35				FeNe Clear	60
	Flt Fld	~~in~~ in IB						Tung A 1/4	600
	Comp (Looking for Line IDs)							FeA Clear	70
	HD 47839	06 35.5	+09 59	21 18	21 36			FeA Clear	~~50~~
	HD 66141	07 57.1	+2 36	21 42	2202	0033W	+2 28	FeA	90
	HD 86360	09 52.9	+12 55	22 13	~~1~~ 23 00	E +		FeA	
	Flat							Tung A 1/8	120
	Dark								

Spectr. Temp. ..... Dome Temp./Hum. 5°C / 50% Transparency Conditions FINE 292

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Chiller Bath @ +7.8°C @ 18:10 EST

PC CRASH - beginning

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~ Wave Length	P.H.	Program	Remarks	Quality
40 B 11				PCS	1800/45°	120	3860Å				
										PC CRASH 19 secs into 1st Comp.	
30/4	OK	5.67	Am							* Astro clock time Exp to ≈ 19 40 EST	
70/11	OK	4.40	OTV(6)						600/sec		
2600/150											
~~700/36~~					approx 1800/50°	120	>?, 4800 ✓				
		1.40	OTV(6)	"	"	"	"		3000/sec		
2000/50		5.5	R II	"	"	"	"		IA.	Bath=7.7°C 1200sec Heat T=35.7mA	
1800/60	Good	5.22	B9 IV	"	"	"	"		IB [B/H SB] [1200 sec + 1200 secs]		
3650/160				"	"	"	"		IA		

293 Mon–Tues Photon Counting Spectrograph WORK

Date MAR. 7-8/88 Observers T. [illegible] K

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
773	Flat Field	Done	while Tube Still cooling (Tube Stack ≈ 25uA)					Tung A 1/16	600
774	" "	Tube	Stack ≈ 30uA	–				"	120
~~775~~	" "	"	" " ≥	30uA	Bath @ +3.8°C			"	600
775	1st Comp. T mon	while on 1st star					+	FeA Clear	70
	HD 44990	06 19.8	+7 08	18 50 53	19 ≈ 45				~~600~~
	"	"	"	1945				FeA Clear.	70 sec
776	NGC 2392 (1988)	07 29 (1988)	+21 00 (1988)	20 11	20 44				
	HD 66141	07 57.1	+2 36	2049	20 ≈ 59				
	HD 76151	08 49.4	–5 04	2106	21 ≈ 26 10		T9 Comp	FeA	70
	HD 93521	10 42.7	+38 06	21 40	2200		T81 Comp	FeA	60
2, 3	HD 95735	10 57.9	+36 38	22 25	230643				
LR ~~776~~	HD 115521 (Coo VIR)	13 12.6	+06 00	23 12 12	233215		T85 Comp	clear FeA	60
DR 9	Flat Field	Tel on platform			00 0535	0 0		A 1/16 Tung	120
	DARK	"	"	(Dust cap in place)		0 0		Push DARK	600

Spectr. Temp. ..... Dome Temp./Hum. +4°C / 65% Transparency Conditions .... Some cloud coming ....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -2°C / 80% 294

Comparison / Filter	Exp.	Exp. Mtr. A ~~B~~	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		2330/125				PCS 1800/51°	1800/51°	85	IIa 4800			written	
		" "				"	"	"	"			not written – superimposed on (comp.)	
		2700/160				"	"	"	"			written	
		390/22				"	"	"	"	IB	IB buffer	IB	
		~~700~~/33	OK	mv 5666	F7 Tob	"	"	"	"	IA	IA 4 yrs.	600sec + 1200sec. [PC crash @ end of 600sec exp]	
		800/30				"	"	"	"	IB IB		crash during expo 809 cnts warm boot up	
		35/5	OK	83		"	"	"	"	IA	Clown Face Neb		
		3→5K/300 400	OK	5.5	K2III	"	"	"	"	IA		fuzzier than last night	
		8-13K/50	OK	V=6.00 6.67	dG3	"		"	"	IA IA	as high as 1500 cnts/sec	6200sec each kept @ 1200 cnts until cloud	
		300 600/15 22	OK	6.76	O9.5V	"	"	"	"		6 in - 0*	as high as 850/sec H	
		30 100/16	OK	V 7.60	M6	"	"	"	"			thin cloud	
		800/40	~~Poor~~	V= 4.80	M2III	"	"	"	"	IB	stalve l	Cloud thickening	
		2300 2900/150				"	"	"	"	IA		Tube Stuck @ +35.0 uA	
		1-7/1-7				"	"	"	"	IA			

295 Thurs-Fri

Date MAR.10-11/88 .... Observers T.m .....

Emulsion Batches:

5m ..Ilford Eq 235-... Feb2 188 24 hrs

5m ..Ilford IAT-Feb16.

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50212	HD 47105	06 31.9	+16 29	19 38	19 45	00;09 W	+	FeARC A 1/2	10 10+10
50213	HD 56986	07 14.1	+22 10	19 55	20 18	00 02 W		"	10 10 sec 10
50214	HD 66141	07 57.1	+2 36	20 26	20 56	00 06 E		"	10 10
50214F	Focus Test						"	FeARC Clear	10/10
50215	HD 86360	09 52.9	+12 55	21 12	22 47		+12 38	FeARC A=1/2	~~5.24~~ 1500
50215T	~~Spot Calib for 50212-213, 50215.~~					15min@D4	17.5V 3900	15V ~~4320~~ 4	15 810
50216	HD 76151	08 49.4	-5 04	22 54	~~23 45~~ 00 22	02 26 W	+	FeARC A=1/2	1060 1182 627

Spectr. Temp. 35°F ..... Dome Temp./Hum. 0°C / 60% Transparency Conditions ... Photometric - SI hazy ...

Focus ..... 397.5 .....

Spectr. Temp. 32°F ..... Dome Temp./Hum. -5°C / 98% 296

* Diffuser in f/LARGE APERTURE

Exp. Mtr. * B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
107					G=5430						
188 27139	OK	1.9	AC IV	BC	1200/508	BS	IIIa-J-eGy	1	Hsm Sp-KK		OK
64 14,500											comp/sl wk
62 15682	"	3.9	F0 IV	"	"	"	"	1	" " "	MAR III hung up before last comp	OK
00 7354	OK→	4.39	kJ III	"	"	"	IIIaJ-e	1	stdvel		slit
1201 1495	90s0			"	"	"	"	1		T=+34°F Set 397.5	center Red
50 20000											comp/slit
20,100	OK	5.22	B9 IV	"	"	"	IIIaJ-eGy	1	SB-Blm	mid Comp 1900 cnts	OK
							IIIa3J-eFg				lost in dew Tank
3267											
2300	So so	6.67	dG3	BC	1200/508	BS	IIIaJ-e	1	Asm Sp-Ht	severe RH occurred @ 1:30 AM	slit

297 THURS-FRI

Emulsion Batches: ~~Majefy 215~~ Feb 2/86

Date MAR. 17.18.1.88. Observers T.N. DRIVE TESTS

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
DT 0001 43.TN	SOri A	1986.5 05 31.3	1986.5 −00 19	19 05	19 14 21	W	−0009	300 frames Fe ARC clear	
~~50217~~	~~HD47105~~	~~06 31.9~~	~~+16 29~~						
DT 0001 44.TN	BS 3654	1988.5 08 42.6	1988.5 +03 27	20 42	20 52	00 22E	300	x2 frames	
145.TN	"	"	"	~~20 47~~	21 04		300	Real time	
FM 0000 46.TN	6 Leo HD 82381	1900 09 26.6	1900 +10 09	21 46			1 frame		
42.TN	" x	"	"		21 49		3 frames		

Spectr. Temp. +34°F ..... Dome Temp./Hum. 0°C/50% Transparency Conditions ..... Fine - Cloudy .....

Focus ... 3.96 .....

Spectr. Temp. ..... Dome Temp./Hum. -5°C/90% Note CCD connection loose, giving occasional unstable image. 298

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
47 columns	OK	V= 2.23	09.5 II	BC	G=5430 1200/500	BS	Image on	BS		1st DT after worm adjs	
		4.9	A0 IV								
	OK	V= 4.30	B4 V		NPF=7	*	Image in	Field	aquisition mode	Amplitude somewhat Low - Connel US SPECTR R=7 Leaving worm gear	
	ok	V= 5.12	K3 III	[Dbl with 37.4 sep and Δm = 3.0]						for Field Aquisition mode Scaling	
	Ok	"									
Note Spectrograph Controler not working. Unable to move Rack either manually or Auto after FeArc Attempts.											

#1 MON-TUES Photon counting work

299

Date Mar. 21-22/88 Observers TN-HK

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
DT 146TN	HD 55185	07 06·8	-00 20	19 05	1911	0018E	-0019	200 frames	
~~147TN~~	"	"	"	19 19	1929			300 "	
148TN	HD 74739	08 40·6	+29 08	20 02	2008			100	
FM Comp 430TN	"	"	"		2012	0050E	+2856	3	
SP@00788TST	"	"	"	2035 14	2044		"	600sec	
"	"	"	"	2045 23	2050			~~300~~ sec	
789JST	1st Comp							FeNe A=1/8	~~60~~ sec
790	2nd Comp.	after focus adj (1/4 Turn CW)						"	"
	3rd Comp	"	"	1/2 Turn CCW				"	"
SP000 791	HD 74738			21 24	21 56			FeNe A 1/16	"
792	Comp@end			21 59				"	60sec
	~~BD~~ +20 2465	1988 10 19	1988 +19 55	22 07	22 30	Bombed @ 1460 frames		FeNe A 1/16	60sec
795	"	"	"	23 00	23 40	01 06W	+20 03	FeNe A 1/16	60sec
797	HD 103095	11 47·2	+38 26	235125	00 11			FeNe	60
799	Flat Field	Tungsten A=1/16 @ (Small aperture in)				@0024→0034			600sec

Spectr. Temp. ..... Dome Temp./Hum. −5°C/55% Transparency Conditions ..... Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. −13°C/88% Both T = +0.9°C all night 300

Head T = ≈ −35 ie 42.8 mA on meter.

Exp. Mtr. 4	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
FRAME SIZE 39	POOR	4.12	HO IV	Fiber Feed	@ guiding magnification				npf=7	East end of worm T2 in worm gear @ end	
39	V POOR	V 4.2								≈ T·4 @ end (no good CRASHed)	
25 dumps	V POOR	4.2 6.6	A3 V G8 II	on Fiber Feed Head			Sep = 1 30.7"	Δm = 2:1	*MAX sep. visible! on Fiber feed Head	FOR scale on Fiber feed	
79 × 79 no filter	"	"	"				" Wave Lang	"		OK FOR scale on Fiber feed	
3000-6000	"	4.2	G8 II	PCS	830/38	Fiber Feed	Hα	IA		Photon counting WORK	
"		"	"	"	"	"	"	*			
2000				"	"	"	"	IB		≈ 5-6 pixels from ½ height	
1400							"	IB		wrong way	
1400	(Then more iterations up to correct focus) (6 pixels seem best)									too far other way.	
~~500-650~~ 550-600	SOSO	V 6.61	A3 V	PCS	830/38	"	Hα	IA		4	
550-600				"	"	"	"	IB			
550-110	POOR SOSO	∞ 9.5	M	PCS	"	"	"	IA		PROB previous Header HX omission Saved	
0-180	SOSO	"	"	"	"	"	"	IA	2400 secs	total	
600-1100	"	V= 6.45	G8 V p	"	"	"	"	IA			
2300 2500	[Note "B" channel counts ≈ 50-60]			"			"	IH			

301 #2

Date . MAR 21-22 cont... Observers . K.K.-T.H.....

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP0008001.TST	Flat Field	(after closing up)		00 38 48		0 0	platform	Tungsten A=1/16	1200*
801.TST	" "			01 09 51				"	3600

Tests MAR 24/25 of PCS; KK-TH noted in Dome Logbook.
We used Speedometer fiber feed with 150μ slit.
- I did Flat Fields and FeNe Comps to study the "Ring of Fire" phenomena. ie what is Relationship with time, Head temp & Bath Temp

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

PC crashed WARM START DONE

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2002400				PCS	830/30°	Fiber Feed	Hd	IA	*Quit@523	(No one was here)	WRITTEN
100-2300				"	"	"	"	"			

Note I had some problems doing a "Cold Setup". I think connection got bumped @ Com 1 when I plugged in printer to Best, because it was necessary to upload M6809 as a cold setup. I found I could do it going through instructions completely, including the double dos stuff and Datacomm. Then I was able to "Warm START" in non doledos mode. ~~Both work Doledos but~~ Tm

PS. I don't know why the time changed in the "Shoot" programs. The Best time was OK. I remembered how to Reset program time. OK now.

I think I can now do a PCS cold start. I don't know why it took so many tries though.

303 Fri Sat PCS Engineering with Spectrometer Fiber Head in Place

Emulsion Batches:

Date MAR 23/26/88. Observers ...TG.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
								FeNe A=1/4	60
SP	HD 93742	10 44 13	-03 30	22 42	23 22	W	-3 49		1800
SP	"	"	"	23 24	23 52	01 00W	"		1800
								FeNe A=1/4	60 sec
840	BD +20 2465	1985 10 19.5	+19 55	00 07	00 37	00 15W	+2003		1800
841	Comp @ end			00 44		00	platform	FeNe A=1/4	60
842	Flat Field @ end			00 49		"	"	Tung A=1/16	1200
	~~DARK~~								
844	DARK (All light OFF)			01 14		"	"		2x 8
845	"	"	"	01 25		"	"		600
	~~Flat Field Long~~							Tung A=	3600

Spectr. Temp. ..... Dome Temp./Hum. +7°C / 90% Transparency Conditions ..Cloudy - 5/ clear ..... 304.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +5°C / 95% TV ccdguider @ 8 frames ≈ ½ Int for cloudy guiding - Sigma/ ≈ 100 cnts/sec

Exp. Mtr. / Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30 20											
30 10		V=									
500 15	5050	6.91	A2	PCS	830/30°	150μ	Hα	IA	spectrometer Fiber Feed	Hilt @ 23 05/ Alt 2312 much clouds/ 1st	
500										clear now	
20	poor	"	"	"	"	"	"	IB	(500 cnts 14 clear)	500 cnts/sec thinly haze	ok
30 25				"	"	"	"	IA			
20		V=								CCDINT	
30 8	5050	9.5	M	"	"	"	"	IB	clear	easy to guide on @ 22 frames	
20 22											
T90/100	Note - Rack put to 17,500 to Reduce signal from							IA	5,500 or so	The signal from	
known	sources like			FeNe's	Tung. varied	today	when	all	other things were equal.		
3 0											
3 4				PCS	830/30°	150μ	Hα	IA	cloud now but last 2 stellar		
0											
5	(just for fun)			"	"	"	"	IB	exps had clear sky		

305 TUES-WED

Emulsion Batches:

Date MAR 29-30/88 Observers TH

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
849.1ST	Comp			00 28				Fe Ne 1/8	100
850 850.	BD+20 2465	10 1988 19.5	+19 55	00 34	01 04	W	+2003		1800
not WO'd	Comp [Guess I forgot to WRITE This]							Fe Ne A 1/8	100
851.	Flat Field [Ruck @ 26,000]			01 21				Tung A 1/16	1200
	DARK Lights Out			01 47 58				cap in	1800

Spectr. Temp. ..... Dome Temp./Hum. +5°C / 60.70 Transparency Conditions ... SHORT Clear hole 306

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../..... Chiller 2 -20°C ± 2

no filter STACK Temp ~~38~~ 43 8.3mA

Exp. Mtr. #	B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30	110				PCS	830/30°	BS	H+				
00 ~~50~~	13	5050 OK	~~9.5~~	M							Near Moon - Hazy (CCD Focus on monitor of SLOT is poor)	
270	80											
2600	580								IB			
-5 / 1-7						.	.	.	IH	→ not continued, as I turned down PCS (Backed up on Floppy)		

307 Wed-Thurs Note Astr clock ST 2 min ahead of old ST clock. Emulsion Batches: .....

Date MAR. 30-31/88... Observers ..TA..... Astro clock appears ..... to be correct.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
53	Flat	(While moving Telescope)		18 56 30		0 0	platform	Tung A 1/16	600
54	1st Comp			19 15 43				# 4 A 1/4	60
55	Flat			19 23 48				Tung A 1/16	600
55	HD 86801 ??,	09 55 8	+29 02	19 38 46	19 58 47	Cont. E	+28 42		1200 +
	"	"	"	20 00 08	20 20		"		1200
56									+
	"	"	"	20 20	20 40	0 1 04 E	"		1200
Comp 57		1988.3 Reading							
58	" None	09 10 01.3	"	20 46	21 16		+28 46		1800
59	Comp while moving to next star								
60	BD+20 2465	10 19.5 1988	+19 55 1988	21 25					
61	Comp (Labeled BD+20 2465 1988)							# 4 A 1/4	60
62	AW UMa "B"	11 29.4	+30 02	22 07	22 38		+30 10	+	1800
	" "	Cont	"	22 41			"		1800
Restart (cold)	" " "A"	BRT one		23 ~~14~~ 34 ~~37~~					1200
Restart (cold)	" " "			23 51					1200
	Near Moon	channel H	18 cnts/sec	Chan B 53 cnts/sec					
	Nearer Moon	"	"	(33-45)	"	(80-130)			

Spectr. Temp. ..... Dome Temp./Hum. +4°/65% Transparency Conditions .. Fine 308

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 0° /80% (Red Cd tonight) Chiller Temp = -20 at beginning
Stack Temp = 38.3μA
Previously Blue Cd used.

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
700/1200					830/30°		Red Columnator			Rate@ 39000 (no diff) Bumpier than usual?	
350/700											
700/1200										Rate@ 3175	
2/~~200~~	soso	V= 8.88	GOV	PCS		300μ	HK	IA	std vel ?	south one of pair *1000 cnts done last year with PCS Tops	
+ 1250								"		Typical count in B = 170/sec	
+ 1250								"		Comp @ End @ 2 42 2 IB	
7/160								IB	Std vel ?	NW of Pair	
						Note	There is a bit stai (IA) Rel	NNW		20' of this previous pair	
10/130		~9.5	m			300μ		IA		as in spec 210	
327/700								IB	I could have sworn it was Reversed for the last Std vel	Dark taken without sky = 0-7 both A & B	
7/75	soso	[As high as 100 cnts/sec]	(Stt	Comp in B' as it should be for → PCS	830/30°	300μ		IB			
4/80	"							JB			
14/600	"	cnts as high as 850/sec						IA	CRashed @ 58sec into exp		
[CRASHED 3rd time at end of plot of top line]									CRashed again during twenty through plot		
(Exactly like 2nd CRASH)											
						More moon cnts			A (240-260) B (595-630)		

309 Tues-Wed

Date Apr 5-6/84 Observers TN

Emulsion Batches:

Int time

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
OT 00149 TN	HD 76757	08 53.0	+1 56	19 33	19 44	00 29E	+01 44	Ox	~~600~~
150 TN	"	"	"	19 48	20 07	00 06E		"	600
151 TN	"	"	"	20 15	20 34	00 29W		"	600
152 TN	HD 99491	11 21.7	+3 33	20 51 52	20 58 15	0147E	+0313	Ox	100
153 TN	"	"	"	21 05 25	~~21 50~~			"	100
154 TN	"	"	"		21 31 30			Ox	300
155 TN	" BR Tone	"	"	21 39	21 45 45			Ox	300
156 TN	" "	"	"	21 53 08	22 01 2			Ox	300
157 TN	" "	"	"	22 03 20	22 04 37			Ox	60
158	" "			22 11 05	22 11 40			Ox	30
159	"			22 14 02	22 15 04			Ox	60
160	"			22 21 30	22 28 21				300
FM 00044 TN	Pair HD 99491			22 37					
45 TN	" "								

Spectr. Temp. ..... Dome Temp./Hum. 1487/1927 Transparency Conditions hazy 310

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 143°F/1986

note "GRAPHICS" needed to plot on printer

The East end of Worm Gear In DRIVE Gear Worm Gear E

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	B	Remarks	Quality
5	OK	6.45	AO	7		Fiber Feed	Rack= 11,900	Above	Fiber hard Slot	H1	H9	
5				7			"		(moved box up from previous)	410 moved Dome e	H:5 FR 86	
55				9			"			H:8	J9	
75	ver OK	6.04 Δ=1.0	dKO	7	Both in Fld		"		dbl sep = 30.5"	J.3	J.7	good dbl
3 box up *				7	(Lower Left star out of Box	in Dec)			* bottom brt star out of box	(J:2 approx)	J:5 star RA in	
87	SoSo			7	(never symetric in	Box)	Scattering Fiber slot		stars RA centered in Box	J:8	J:10 ~ KO	
9	OK	Sometimes too near LHS of Box		7, 9, 11 no go			above slot		Brt star near Left of Box	K5	K9	Can't Analyze
39	SoSo	(Plots near top of screen)		7 (screen)					Brt star near RHS of Box	K.4 leaving	K.9	
9		Plots near top of screen)		7					Brt star e Left of center of box	K:2 entering	K:2	dbl sine curve?
9									LHS of BOX		K:9	
3												
9	OK								center of Box		K:8	OK
7x87	7569 pixels										sep 30.5" on Fiber Feed Head	
7x87	ok seeing			(Fiber View v2	+ Image Aquisition View)						" on	
											getting cloudy & foggy	

311

Fri Sat

Date ..APR.8-9/88... Observers ..TH.....

Emulsion Batches: ..IIa-E fg 2J5 Feb 2 1988 (gas 24 hrs)
.....
..IIa-O-E 1A7 Feb 16

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50217	HD 86360	09 52.9	+12 55	20 17	22 17	01 12 W	+12 37	Fe ARC Clear	20 ? 10
50217T	Spot Cal's for	50217, 20 (next night)	+50223	15 min @ 04			17.5V 3900	15V 4300	15V 4810
50218	HD 136202	15 14.2	+02 09	22 29	23 27	12 52 E	+01 56	Fe ARC Clear	20 10
50218F	Focus Test			23 40		00	+23°	Fe ARC Clear	20 10
Tests	Time comp's on HD 136202 ↓			00 20	00 30		+01 56		
"	(It seems to have a close fit comp now)			00 43	00 53		"		

Spectr. Temp. 44°f ..... Dome Temp./Hum. +40f / 65% Transparency Conditions .. Fine ... but .. gusty. from North

Focus ... 394 .....

Spectr. Temp. 40°f ..... Dome Temp./Hum. +35f / 85% * Comps with diffuser in, Large Aperture 312

Early problems with E dome Turn Relay

Exp. Mtr. Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5000	?										comp OK
5000	poor	5.22	B9 IV	BC	1200/5048	BS	IIIa-efg	1	S.B-Bln	T(spect) = 42°f Set 394	OK
							IIIa-efg		* Comp. Feats	(20 sec clear); (~10 sec clear) (10 sec Hazy)	700 cnts
(BS image on CCD poor also)											
5830	v bad	5.60	F8 II-V	BC	1200/5048	BS	IIa0-e	1	Std Vel	T(spect) = 41°f	
				This is too slow!! I wonder if it's all due to bad seeing. Seeing is v Bad							
4000											
1000				BC	1200/5048	BS	IIIa-e	1	T = +40f	Set 394	v s l Red
Filter											
1780	v bad			BC		BS	(of course, Altitude is higher)			Sky baffle Removed	
1450	v bad			BC		BS				Sky baffle replaced	
I don't know, maybe seeing was worse on second try.											

313 Mon-Tues

Date APR. 11:12/88 Observers Tn (Stefan planning)

Emulsion Batches: Formvapar Mfr, Tri-X Safety 215 Feb2/85

1.56, 0.25 Tri-X Safety 1A7 Feb16/85

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50219F	Focus Test					0 0	+2 30	FeARC Clear	≈10 ≈10
DT000161Tn	HD 66141	07 37.1	+2 36	19 38 45		1 07 W	+2 31	300 frames	
50219	"	"	"	20 01	20 21	1 22 W	"	FeARC AV4	810sec 105sec
50220	HD 86360	09 52.9	+12 55	20 43	22 09	01 15 W	+12 37	FeARC Clear	450 [illegible]
									1
50221	HD 93521	10 42.7	+38 06	22 18	23 44	02 02 W	+37 44	FeARC clear	628 677 683
DT000162Tn	HD 136202	15 14.2	+02 09	23 55 19	00 03 15	02 11 E	+01 56	300 frames	
50222JT	Spot Calib	For 50218, 19, 21, 22.		15 min @ 15V		D4 3900 D3 4300	D2 4810		
50222	HD 136202	15 14.2	+02 09	00 09	00 22	01 52 E	+01 56	FeARC clear	900 641
DT000163Tn	"	"	"	00 25 10	00 33 07	01 41 E	"	300 frames	
	Light path tests while on α Boo.								
	I can clearly see slices of α Boo on grating and								
	see them move as I move Telescope in Dec & RA								

Spectr. Temp. ..50°f..... Dome Temp./Hum. 18C/50% Transparency Conditions .....Fine..-.slhazy.....314

Focus ..392.....

Spectr. Temp. ..48°f..... Dome Temp./Hum. 6C/90% → Diffuser in for FeARCs

note → Pl #s 19–21 labeled 18→20 on plate

Exp. Mtr. Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3700 5,590				BC	G5430 1200/5008	BS	IIIa-fy	1		T=58f Set 392	center Si Red
47 columns	fine	V= 4:39	K2III	npf=7	"	Below BS	[U: 4 in worm]		Rack posn 19,550 (ideal)	for image centered in fld	shows periodicity
10 cnts 5161	"	"	"	BC	"	"	IIIa0-e	1	std-vel		Comp slwk Si wk
64,700 1,630	"	5:22	B9III	BC	"	"	IIIa-fy	1	SB-Blu	Rack@19,800 [image visible both sides]	comp slwk OK
comps (county)		490,1930,567									
1550 1860	fine	6:76	09.5V 6:76	BC	G=4940 830/1402	BS	IIIa0-e	1	Blu-OK	T=149f Set 393	Comp OK OK
47 columns	fine	5:6	F8III-V			"	[Z 8 in worm]		Rack posn 19800	npf=11	
							IIIa0-e				~ v
300	fine	5:6	F8III-V	BC	830/1402	BS	IIIa0-e	1	std vel	thin cloud	comp OK OK
7 columns	V fine	"	"			"	[Z: 4→5]		Rack posn 19,800	cloud (moved dome during exp)	

315 Tues-Wed

Date Apr. 12-13/88 Observers T.H

Emulsion Batches: IIa-f-cfg 215 – Feb 2/88

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50223	HD 29316	04 32.0	+53 17	19 38	20 26	05 00 W	+53 33	FeArc clear	1,190 1,600
Apr 14/15	Echelle Reticon exp tests.							Hollow cathode	180 sec
									25 sec
	Flat Field @ ~~α Leo's posn~~							Tungsten	12 sec
Test	OBSERVING NOW - Apr 14/15			H=90%	T=+5°C	Dome, s/cloudy		"	8 sec
	Flat Fld's x3	@ α Leo posn						Tung	6 sec
	1st Comp	@ " " "				01 ° W	+12 08	Heath	45 sec
	Dark	(no good, not kept)		~~21 53~~			"		120 sec
	HD 87901	10 03 03	+12 27	22 14	22 27	01 35 W	"		
325	"	[started 2228] Restart @		22 ~~40~~	22 46				
	Comp.							Heath	45 sec
	HD 87901	10 03 03	+12 27	22 49	23 11			Heath	45 sec
	Comp								

Spectr. Temp. ...53°F..... Dome Temp./Hum. +11°C/69% Transparency Conditions ...Some cloud coming 3.16...

Focus ....3.91.....

Spectr. Temp. ..... Dome Temp./Hum. +9°C 180%

Exp. Mtr. B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7000	fino	V AB= 5.36	A5n	BC	1200/50.8	BS	IIIaJ esg	1	Asm Sp-Kk	same cloud sl Fog	Comp OK wk
no filter					Echelle grat			x grating			
1,200/16K					1.630			.3182		Order 125	2 lines only
4332/16K	(That funny "glitch" that usually on flat Fields, Left of center of middle line on plot, is near upper Left of Top line now) → (This happened only on a long Comp that had small picket fence effect) always a "picket Fence"								Many small "picket fences"		
14,400											
3158	OK						central wavelength				
~~7745/16K~~ x3000 erg/meter		7800/8K cuts.			1.630	60μ	4560Å	.3182	Order 125		
34 cuts		2652/4K cuts									
117	Very poor	V= 1.36	BTV	490/1K						(poor seeing illuminating whole slit length)	
~~+50 ??~~	poor			269/1K							
36				2611/4K							
303	poor	V= 1.36	BTV	1289/2K							
39 cuts				2816/4K						over →	

317 ~~Tues~~ Thurs/Fri

Date . Apr. 14-15 cont Observers . . . T.H.

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
596C	Comp	@	α Boo	posn	(picket fence 1st try)			Heath	45
662S	HD 124897	14 11 06	+19 47	23 24	23 32	E			
728S				23 33	23 44				
794S				23 45	23 56	01 03E	+19 23		
860C	Comp @ same posn (after exposures of α Boo								
926S	HD 124897			00 03 07	00 20				
	Comp @ end							Heath	45
1058	Flat	}						Tungsten	6
1124	Flat	}	@ α Boo posn,					"	9
1190	Flat	}						"	16
1256D	DARK	while closing (lights out)							600
	DARK	while tapping dewar (lights still out)							600
	Then GLONG done on TEST 1872								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..Hazy.....318....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum 0°C / 90%

Exp. Mtr. no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
~~3~~642				2906/1K 1200/3182	1630	60u	4560Å		Order 125	Pointed faulty comp	
391	poor	V= 0	K2IIIp	725/1K						→ mainly center guided	
388	4			909						→ Guided @ LHS of Slit	
470	4			822						→ " @ RHS of Slit	
				3071							
1780				2376					S/L left of center guided		
43				3160							
1161				1539							
1747				2319							
3244				4246							
C				19							

319 Thurs-Fri

Date APR 21-22/88 Observers T.n

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
DT00164.Tn	HD 95345	10 55.4	+04 09	19 47 08	19 52 53	E	+3 48	int x0	300 tms
DT00165.Tn	"	"	"	58 32	19 10 36	0107E	"	"	600
	Echelle Reticon OBS Tests								
	Flat x3	ulisloon Regulus						Tungsten	1 sec
	HD87901	10 03 03	+12 27	20 54 11	21 03			H cuth	90 sec
	"	"	"	21 05	21 13			H cuth H cuth	40 90
	Flats x3	@ Reg posn						tung	8 sec
	Flats x3 Spica	@ Spica posn						" H cuth	8 sec 90 sec
992S	HD 116658	13 19.9	-10 38	21 29	21 44 20	E	-10 59	H cuth	90 sec
1124S	"	"	"	21 49	22 04			"	40 sec
	"	"	"	22 08 27	22 21				90s
	"	"	"	22 24	22 40				90 sec
	Flats x3	@ Spica posn						Tungsten	

Spectr. Temp. ..... Dome Temp./Hum. 15°C / 70% Transparency Conditions . Fine 320

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... /

East side

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2 columns	50 50	V= 4·93	K I III	BC	Rock posn 19800	BS	hpf=7		GH5 in worm		BAD(OK)
1	"								H·7 in	Int turned up	
2 F/to				Exp Counts			cent λ	H=500 V·215	ORDER		
179, 1165	168			1048 1059	1·630	60μ ·277	4560Å	X grat tilt	125		
300	poor	V= 1·36	B7 V	1750						int erasing effect at usual "glitch posn. Not seen in any exp.	
2800				933							
836											
2655											
328	poor	V= 0·96	B1 V	1775						NORTH is up on monitor guide! below slit	
313				1529						guide! above slit	
310										guided below slit	
376				1722						" " "	
2800				1500						T = +0.524	

321

Emulsion Batches: ..IIIa.F-e.......... old

....

.... Diffuser in

Date . APR.21-22/88.. cont. Observers .KK-T.4.................

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50224	HD 137909	15 23.7	+29 27	23 16	23 37	0300E	+29 16	FeNe Clear	60.60

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. F no ..... 322 .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Luna filt. 7500	ok	V= 3.66	Fop	BC	1200/40.2	BS	T1aF	1	Asm Sp 1/k	Set 391 T= 40°	good

323 FRI-SAT

Dev APR 23 Tg 3+, 0.76, 0.65

Dev Apr 23 Tg 1.54, 0.25

Emulsion Batches: IIIaJ-efg 2J5 Feb2 24h Gas

IIaO-e 117 Feb16/88

Date APR. 22-23/88 Observers Fds-Tm

Comp Counts

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
50225	HD 83754	09 35.5	−13 53	19 49	20 45	00 55 W	−14 08	Fe Arc Clear	947 1060 1355
50226	HD 74280	08 38.0	+03 45	20 53	21 16	02 22 W	+3 34	"	830 900 960
50226T	Spot Calib for 50225,26,28.			15 min @ D4	17.5V 3900	1.5V 4300	1.5V 4810		
50227	HD 100600	11 29.5	+17 21	21 27	22 07	00 20 W	+16 59	Fe Arc Clear	777 630 560
50228	HD 147394	16 16.7	+46 43	22 18	22 37	03 53 E	+53 34	"	1168 1350 1600
50229T	Spot Calib for 50227,29			15 min @	D4 15V 3900	03 4300	D2 4810		
50229	HD 154445	17 00.3	+0 45	23 07	00 11	03 06 E	−00 46	Fe Arc Clear	649 650 800
~~50230~~	S Coph	1987 22 28	1987 +58 21	00 22	01 14	07 36 E	+58 25	"	700 1000
50229F	Focus test					0 0	+10	"	1600 1600

discarded (hardly a trace – given to Mike) renumbering need of next night anyway.

Spectr. Temp. 40°f ..... Dome Temp./Hum. +6C / 60% Transparency Conditions . Fine - hazy - Cloudy.

Focus 394 324

Spectr. Temp. 41°f ..... Dome Temp./Hum +3C / 70%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12,504					G 5430						
12,500	ok	5	B5 V	RC	1200/5018	BS	IIIa-efg	1	B stars		ok
12869	ok-	4.3	B3 V	"	"	"	"	1	"	seeing variable	ok
12800 4pm	soso						IIIaJ-efg				sl fog ~
5000											Comp ok
5000	soso	5.95	B4 V	RC	1200/508	BS	IIa-e	1	B stars	Spectr Temp = +43°f	vsl wk
12,500											ok
12,600	ok	4	B5 IV	"	"	"	IIIaJ-efg	1	"		~~vsl wk~~
							IIa-e				~
4,560											Comp sl wk
900	soso	5.6	B2 V	RC	1200/508	BS	IIa-e	1	B stars	cloud coming in.	sl wk
147	poor	5	F-G var	"	"	"	"	1	"	thick clouds attempt	very very wk
				"	"	"	"	1	kept	anyway A T=+41°f	center vsl hel

325 Sun-Moon

Date APR. 24-25. 1885. Observers F.d.s.-T.n.

2 60,0,14 5m @ 68° Tu
1.72,1 26 8m 68°
4m 68°

Emulsion Batches:
Tu-a-cl. 25 MAR 15
Tu-a-e IA7 Feb 16
Tu-a-f-e APR 15 1885

C.I. for Comp Co. Ex

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
50230	HD 120315	13 43.6	+49 49	20 22	20 29	03 27 E	+	Fe Arc A=1/2	10 sec 1710
50231	HD 104337	11 55.7	-19 06	20 42	21 16	00 45 E	-19 28	"	5 1/2 000 540
50232	HD 100600	11 29.5	+17 21	21 28	22 16	00 37 W	+	Fe Arc Clear	7 sec 600
50233	HD 147394	16 16.7	+46 43	22 35	22 58	03 27 E	+46 27	"	140 sec 1200
50232	T Spot Calib for 50230, 33, 34, 37, +50247.			15 min @ D4 17.5V 3400			D3 15V 4300	15V 4810	
50234	HD 159561	17 30.3	+12 38	23 14	23 29	04 09 E	+12 47	Fe Arc Clear	2000 196
50235	"	"	"	23 37	23 49	03 49 E	"	Fe One Clear	8 5.
			(Shutter left in for Exposure)					Fe Arc Clear	160 1200
50236	HD 213307	22 25.5	+57 54	00 03	00 56	7 35 E	+58 27	Fe Arc Fine Clear	*
50237	T Spot Calib for 50231, 32, 40.			15 min @ 15V		D4 3400	D3 4300	D2 4810	
50237	HD 187929	19 47.4	+0 45	01 12	02 05	3 52 E	+01 06	Fe Arc Fine Clear	300 3000
50238	T Spot Calib for 50235, 36, 37, 38.					15 min @ 15V D4 4810		D2 7V H	1 D 5 sec
50238	HD 161592	17 41.3	-27 48	02 18	03 52	00 01 W	-27 42	Fe Arc Fine Clear	23 K 23 K
50239	HD 166182	18 04.5	+20 48	03 59	04 21	00 06 W	+	Fe Arc Clear	160 1700
50240	HD 161096	17 33.5	+4 37	04 25	04 31	00 12 W	+	"	100

Spectr. Temp. 43°F Dome Temp./Hum. 5°C/86% Transparency Conditions PART Cloudy

Focus 3.74

Spectr. Temp. 40°F Dome Temp./Hum. 0°C/90%

New D9

Diffuse to all night for Comparisons

Exp. Mtr. Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
25415		V= 1.86	B3V	BC	G=5430 D200/508	BS	IIIaJ-Ey	1	B stars		OK
5000	OK	V= 5.26	B1.5V	"	"	"	IIaO-e	1	"		OK
5000	Sos	595	B4V	"	"	"	"	1	"		Vslwk
2,100 3,500	"	4	B5IV	"	"	"	IIIaJ-Ey	1	"		slwk
							IIIaJ-Ey				
2:220	poor	2.2	A5III	BC	1200/40.5 G 4270	BS	IIIaJ-Ey	1	Asm Sp-Kk	cloud	slwk
30 000	"	"	"	BC	1200/40.5	BS	IIIaF-e	1	"	Set 394 T-41°	slstr
Te-I ph Filter	Sun	2 ~~x 30~~	setup	Fe Arc/C	clear	exp sun	comp (100 cals		each) in all then Fe C	Fe NE 3 secs	
30000	poor	V= 3.7	F5I6	BC	1200/40.5	BS	IIIaF-e	1	Ceph-pgm	* Comp FeNe 3x20sec Clear FeArc 3x10sec	slwk
Filter							IIaO-e				
40,000 H, Ca	poor	V= 4.0	F6I6	BC	1200/40.5	BS	IIIaF-e	1	Ceph pgm	3x20sec FeNe 3x10 sec Fe Arc/Clear	Fastwk slwk
							IIIaF-e				
Blue filter	poor	V= 4.2	F8	BC	1200/40.5	BS	IIIaF-e	1	Ceph pgm	some cloud	slwk
~~Blue~~ ?	OK	4	B2IV	"	1200/4278	"	IIIaJ-Ey	1	B star	Set @ 394	cwk
5000	"	393	K2III	"	"	"	IIaO-e	1	std/vel		OK

327 MON-TUES

2.83, 0.26 8m 68° 4m 68° T4

Emulsion Batches: 17 Feb
IIa-E / IA.F ... APR 23
IIa-F / IIa-E ... APR 18 '88
↳ (See below)

Date APR 25-26 1955 Observers Fds - Ty

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50242F	Focus					0 0	+10	FeARC Clear	3000 3000
50241	HD 32630	04 59.5	+41 06	19 58	20 03	0457W	+	FeARC Clear	1400 1400
50243	HD 34759	05 14.8	+41 42	20 07	20 24	0502W	+4159	"	1200 1200
50244	HD 48379	06 40.5	+67 41	20 40	20 58	0409W	+6730	"	1500 1370
50245T	Spot Calib	for 50241	45			15 min @ 15V 3900	D4 03 4300	02 4810	
50247	HD 205071	21 27.5	+70 07	21 11	21 20	1009E	+7035	FeARC Clean	1200 1290
50245	HD 208947	21 54.5	+65 41	21 56	23 20	0837E	+6611	"	900 900
50246	HD 213307	22 25.5	+57 34	01 28	02 17	0609E	+5827	FeARC FeNE	1500 3000
50248	T.I Spot Calib	for 50246	6,5953		15 min @	15V D4 4810	7V 02 Ha	7V D5 5450	
↳	1.62, 0.22								

Spectr. Temp. 49°f ..... Dome Temp./Hum. +9°C / 40% Transparency Conditions . Fine - Cloudy .....

Focus . 392 .....

Spectr. Temp. 48°f ..... Dome Temp./Hum. +5°C / 70%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				SC	1200/508	BS	IIaO	1		T=49°f set	
2,200	OK	4	B3V	"	"	"	IIaO-e	1	B star		OK
2,028	ok	5	B3V	"	"	"	"	1	"		v sl wk
1,500	Fine	5	B4IV	"	"	"	"	1	"	Reverse!	OK
							"			In Reverse! " 19 " 20	v v
10,000	ok	3.2	B1IV	SC	1200/508	BS	"	1	B star		OK
2,100 300 1.7Hor	OK	6.4	B2V	"	"	"	"	1	"	In cloud	Flexure Focus Exp wk
6000	slSo	V= 3.7	FC1b	"	1200/1405	"	IIIaF2 *	1	Ceph Pgm	~~Rate 4, 5 cents, Fe/ARC + Hg~~ ~~No Code~~ Set 3'4	*
							" *			Cloud again	v *
				Note, for 50748, 2 Comps						Fe/ARC 4500 cnts, Fe/Ne 3000 cnts, 20 sec	
										* Wrong emulsion prob IIaO Tm	

329 Tues - Wed

Date Apl 26/27/86 Observers Fds-TN

Dev MAY 12 Emulsion Batches:
Dev 5 min @ 68°F IIa.O-a 147 APR 23
Dev 4 min @ 68° IIIa.J-a 215 MAR 15
IIIa.F-c APR 18/85

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
50247	HD83754	09 35.5	−13 53	19 57	21 21	01 43 W	−14 11	1 FARC clear	1585
~~50248~~	HD47394	16 16.7	+46 43	21 32	21 53	04 37 E	+	"	1358 400
50248	HD177003	18 57.7	+50 24	22 02	22 35	06 21 E	+50 37	"	1100 440
~~50248~~ 2	Spot Cals for 50248				15 min @ 15V 3400 24		03 4300	P2 4810	
50249	HD 133207	22 25.5	+57 54	22 56	00 18	08 06 E	+58 26	1 FARC	1 FARC
50250	HD 187929	19 47.4	+0 45	00:48	02 17:33	03 29 E	+01 07	"	"
	Labelled @ 51			02 37				1 FARC clear	

Spectr. Temp. +49°F ..... Dome Temp./Hum. +7°C/60% ..... Transparency Conditions ... OK ... hazy ... cloudy ...

Focus ... 392 -345 for G16 330

Spectr. Temp. ~~+40°F~~ ..... Dome Temp./Hum. +3°C/90% .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
25,000	so so	5.06	BSV	BC	1200/50.8	BS	IIIaJ-e	1	Bstar	Spot Calib is II 50232	wk
15,500											
14,550	OK	4	5 5IV	"	"	"	"	1	"	T=47°F " - Lost in Development	
10,400	"	5	B 2.5 IV	"	"	"	IIIaC-e	1	"	Labelled "51"	Fine
							IIIaG-e			T=45°F Set 345	VV
filter 6,000	OK	V= 3.7	FG5b	BC	G4270 1200/40.5	BS	IIIaF-e	1	Ceph pgm	FeArC cnts 3000 each shot FeNe cnts 2900 3X	OK
10784	~~OK~~	V= 4	FG5b	"	"	"	IIIaF-e	1	"		OK
B 151 filter	"			"	1200/50.8	"	IIIaJ-e	1	B star	Set 394 T=41°F cloud	

Note 50250, 51 unfortunately will have to use calibration plate II 50238, which was not developed with these stellar plates

331

FRI-SAT

3f, 031, 0.37 4m 68°

Emulsion Batches: III a F c APR 18/88

Date Apr. 29/30 Observers Fels - T.N

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50251	HD 213307	22 25	+57 54	23 35	00 48	07 26 E	+58 32	Fe ARC Fe Ne clear	2 x 30s *
					D415V	D27V	D37V		
50251	T Spot Calib for 50251, 52.			1 02 5 min	4810	H &	5450		
50252	HD 187929	19 47.4	+00 45	01 03	02 00	3 35 E	+01 11	Fe ARC/ Fe Ne/ clear	*
				Approximate end due to cloud.					

Spectr. Temp. 44°F Dome Temp./Hum. +6°C/90% Transparency Conditions Clearing 332

Focus set 394 for G16.

Spectr. Temp. ..... Dome Temp./Hum. +4°C/93%

Exp. Mtr. no GHar	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20,200	9050	V= 3.7	F6Ib	BC	G 1270 1200/40:5	BS	IIIa f-e	1	Ceph	* to ARC 9000 cnts at beginning * FeARC didn't fire at end	fine
							IIIa F-e				VL
23,200	poor	V= 4	F6Ib	BC	1200/40:5	BS	II	1	Ceph	*FeARC 4,600 cnts at beginning FeARC 6,000 cnts at mid	v k
										Much Cloud now	

333 Sat-Sun Large TOURS earlier - M3 viewed. 4m 68s Emulsion Batches: IIIa F-R ..... A.R 18/88

Date Apr. 30/May 1 Observers Eds-Tq ..... 3+, 0.38, 0.36 for 50253T ..... 3+, 0.40, 0.36 for 50255T .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50253	HD 213307	22 25.5	+57 54	23 00	00 17	07 51 E	+68 29	Fe ARC Fe Ne/clear	7
50253T	Spot Calib	for 50253-55		15 min @	D4 15V 4810	D2 7V Hd	D3 7V 5450		
50254	HD 187929	19 47.4	+00 45	00 34	01 48	03 45 E	+01 11	Fe ARC Fe Ne/clear	15
50255	HD 161592	17 41.3	-27 48	02 03	04 24	01 00 W	-27 37	n	7
50255T	Spot Calib for	50253-55 (Repeat, since it's the		last plate)		15 min @	D4 15V 4810	D2 7V Hd	D3 7V 5450

Spectr. Temp. 50°F ..... Dome Temp./Hum. 7°C/80% Transparency Conditions ..O.K. - some cloud .....

Focus ....3.94.....

Spectr. Temp. 46°F ..... Dome Temp./Hum. 5°C/72% gusty 334

Comparison Filter E	Exp. Mtr. no filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
HK clear *	55,000 56,000	OK	V= 3.7	F6I6	BC	1200/40.5	BS	IIIa-F-e	1	Ceph	Fe ARC 3100 cnts, 5,500 cnts FeNe 3x20sec	OK
								IIIa-Fe				"
HC clear *	10,000	POOR	V= 4	F6I6	BC	1200/40.5	BS	IIIa-Fe	1	Ceph	Fe ARC 5000 cnts, FeNe 2x20 sec	OK
*	28,000 34,200	POOR	V= 4.2	F8	"	"	"	"	1	Ceph	Fe ARC 5000 cnts, 3400, 4300 FeNe 3x20sec	OK
								"				"

335 Tues-Wed PCS work again

Date .MAY.3.-4..1988.. Observers ..TH..... Emulsion Batches: ....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
879 (1st)	1st Comp	1988	1988	(Note- Diffuser and small aperture (2W) in for Comps)				FeA clear	120sec
880	HD 90861	10 29.3	+28 38	01 00		01 24 W	+28 49	FeA clear	120sec
	HD 95735	11 02.6	+36 10	21 38	22 08	01 38 W	+36 13		1800
	Comp for HD95735					"	"	FeA clear	120sec
	HD 95735	11 02.6	+36 10	22 14 55	22 45	W	"		
	Comp for HD95735			22 48					
	FLAT Field			22 55				Jung A 1/16	600
	HD Comp for HD 112299			23 07			+25 58	FeA Clear	120sec
	HD 112299	12 54.9	+25 48	23 12	23 42	01 18 W	"		1800
	Last Comp			23 44		"	"	FeA Clear	230
890?	Flat Field	(Ruck @ 27800)		23 52				Jung A= 1/8	1200
	DARK	Gen On, but no controls touched							60
	DARK	(" ", Dec Set motion often used)							60
	DARK			00 20					300 sec
	DARK (RA, Dec Set motions and Focus switch often pushed)								300 sec
893	LONG DARK			01 15					7200

Spectr. Temp. ..... Dome Temp./Hum. +10C / 50% Transparency Conditions . Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +8°C / 55% chiller @ -3.0°C @ 20 EST

Exp. Mtr. Count Rate	Seeing	Vis Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion WL ?	P.H.	Program	Remarks	Quality
								IB		crashed at begin of	
B ∞-1200	So so	V= 7.20	#2III	PCS BC	1800/52°	Fiber Feed BS	5100Å	IA	std vel	1st exp. uploaded.	
B 200-600	OK	7.6	M6	[Nothing much on plots]				IA	Asm Sp kk	* Green light for "B" not flashing *	
B 90				plots OK on 2nd exp				IA		Both Green lights flashing	nothing in "A"
600	OK	7.6	Note	I tried to avoid noisy		Dec	adjustments	IB	Asm Sp kk	" * " " "	
80								IB		"B" green light off towards exp ending	
1300				PCS BC	1800/52°	BS	5100 Å	IB			
90				"	"	"	"	IA		South Star of pair 10' apart.	
500	So so OK	8.7	#8V	"	"	"	"	IA	std vel	(should be it though)	
95				"	"	"	"	IA			
3000	while closing up.							IA		re nothing on "B" FIFO "B" green light not flashing	
(approx 5-10 counts per channel)								IB			
10-35 counts/channel								IA		plots didn't Look too different (not written)	
5-16/channel		Saved						IB	Both A & B's	green lights flashing nicely	
		Saved									
								IA			

#1
337 Wed-Thurs

Date MAY 4-5 1988 Observers J.n - KK

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Hartmann test								
	Flat - channel A	A		12:36	13:30				
	Dale								
	Flat - channel A	Rack @	27,800	19 03	1923	0 0	platform	Tungsten A-V8	1200
	Bt Comp - Still Labelled FLAT							FcA Clear	200
	SKY near HD90861			19 52					
	HD 90861	1988 10 29.3	1988 +28 38	20 03	2023	W	+2849		1200
	Comp						"	FcA Clear	200
	HD 90861	10 29.3	+28 38	20 29	20 49	00 57 W	"		1200
	Comp								200
	HD 95735	11 02.6	+36 10	20 56	20 16	W	+		1200
	Comp			21 17					200
	HD 95735			21 23	21 43	01 17 W	+		1200
	Comp								200

Note - It seems that Int continues after a "high" on a buffer until you "CB" that buffer. (even if you shutdown Int buffer)

Spectr. Temp. ..... Dome Temp./Hum. +13°C / 39% Transparency Conditions .. Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1250/60					1200/52°	BS	PCS				
+ B											
700 120				BC	↑ 4850-5100Å 1200/52°	BS	PCS	IB	written		
120 10											
70 8	not kept										
300 20	fine	V= 7.2	K2 III			BS	PCS	IA			
5 5								IB			
500 40								IA		cuts as high as 2200	
70 6								JB			
0 24	ok	V= 7.6	mb					IA			
30 4								JB			
700 30								IA			
85 5								IB			

339 D2

Emulsion Batches:

Date MAY 45 cont... Observers K.K.-T.H.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
	HD 112299	12 54.9	+25 48	22 13	22 44	W	+25 57		
	Comp								20s
	HD 112299		+25 48	22 52	23 22	W			
	LAST Comp								30s
	Comp without BS						+25 57	Fe A Clear	20
	~~HD 112299~~								
	FLAT							Hang	72s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. Fine 340

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
300	12	ok	V= 8.7	F8V	BC	4550-5100 1800/52°	BS	PCS	IA	stdvel	South of pair again	
30	6								IB			
									IA			
30	10								IB			
30	5				"	"	no BS	"	IB	written		
500	60											

341 Tues-Wed

Date MAY 10/11 Observers Th - (Nsr = Neeser)

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex
	DARK (By kk)			14 08 32	16 55 12	0 0	platform		
	Flat			20 10 38	21 10 39	0 0	"	T4mg A 1/16	3600
	Flat			23 13 23	00 13	0 0	"	"	"

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . T.o.a. cloudy — than fine...
ruin by 01 EST 342

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Buffer

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	~~P.H.~~	Program	Remarks	Quality
B				BC	1800/5000	BS	5000 Å PCS	IA		Exp time intended 10000 But Current expired 100 secs	~~secs~~ ?
500 75				"	"	"	"	IA		wr. Hen	OK
500 75				"	"	"	"	IA		written	OK

343 Wed-Thurs

Date MAY 11-12 1886 Observers Mr.-Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	1st Comp	(7200sec Flat written 1st)		20 05	20 08	0 0	+36 20	Fe A Clear	200
	HD 95735	10 57.9	+36 36	20 18 45	20 48 49	00 53W	+36 18		1800
	Comp for HD95735			20 51	20 55		"	Fe A Clear	200
	HD 90861	1888 10 29.3	1886 +28 38	21 10 10	21 40	02 15W	+28 48	Comp	1800 200
	HD 112956	12 55.2	+69 19	21 51 12	22 21 16	00 36W	+68 56	Fe A Comp	1800 200
	Flat Field							Tung A-1/16	3600
	Comp for ~~HD~~ HD 13440			23 52		~~H~~		Comp Fe A	200
	HD 13440	15 048	-15 59	23 58	00 34 12	0025W	-16 12		1800 ~~1800~~
	Last Comp			00 36		"	"	Fe A Clear	200
	~~DARK~~ Last Comp (again)			00 45		"	"	"	200
955	LONG DARK	(after complete close up; Gen "off")		01					7200
956	Flat			1200s					
957	Flat			1200s					
958	10000s dark								

Spectr. Temp. ..... Dome Temp./Hum. +9°C / 40% Transparency Conditions ..Semi...cloudy 344

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +6°C / 45% – Cloud by 23 EST

Exp. Mtr. A	Exp. Mtr. B	Seeing	V Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30	10								IA			
40	8	Poor	7.6	Mb	BC	= 5000Å 1800/52°	BS	PCS	IB	Asm Spokk	some cloud – thin lots	
10	5								IA			
* 240	10	poor	V= 7.20	K2III					IB	stdvel	*(signal 400 cnts in clear sky) some cloud	
200	14	SOSO2 poor	V= 8.2	dG6					IB	Asm Spokk	as high as 330 cnts	
600	70								IA			
									IB			
5	5	ok	V= 9.43	K2III	BC	1800/52°	BS	PCS	IA	Asm Spokk	hazy South star of pair	
*Note, IF you halt "H" on exp on one buffer, say "IA"; then you must "CB" it before integrating even on "IB"; or "IA" will continue even though IB was intended.									* IB		Solid cloud (Comp + HDI 3440)	
									IB			
											workmen opened door	

345 This Fri

Date MAY 12-13/88. Observers N.S.T.-T.n

Emulsion Batches: .....

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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	PM Flat (by KT)			9 15 30	17 30	0 0	platform		7200
	1st Comp			1924		"	"	FeA Clear	600
	Long Wk Comp			2000	22 00 18	"	"	FeA A=48	7200
	Continued			2206		"	"	"	2400 + 5400
	Flat	May 13							

Spectr. Temp. ..... Dome Temp./Hum. ..... 1902 Transparency Conditions ..Cloudy..... 346

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1800/5200	BS	PCS	IA			OK
5 8				"	"	"	"	IA			
2 5				"	"	"	"	IB	} Total of	12,600 secs	
4				"	"	"	"	IB	}		

347 FRI-SAT pg #1

Date MAY 13/14 1988 Observers NSF-TG

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Solar Spectrum			19 35	19 55	0 0	platform		1200
	1st Comp	1988 10 29.3	+28 38	20 0541		W	+2849	Fe A clear	600
	HD 90861	"	"	20 2013	20 4015	0125W	+2849		1500
	Comp							Fe A clear	200
	HD 95735	1988 10 57.9	+36 36	20 49	21 19	W		Fe A Clear	1800 ~~2400~~
~~Fmodge~~ 46-TN	HD 112956 46-TN	3 frames (offset = gain @ Zero) focused carefully					[Int	4 frames	
47-TN	" 47-TN	3 frames ("		"	") refocused	"	["	4x]	
	HD 112956	12 55.2	+69 19	21 37	22 0724	0020 W	+6936	clear Fe A	1800
	HD 112956	" "	" "	22 15	2245	0059 W	"	" Comp	1800 2400 1800
	HD 124752	14 10.3	+68 03	22 52	23 22		+6748		
	~~Fe A~~ Comp [Both A & B have green FIFO lights]			23 24		"	"	Fe A comp	240
	HD 124752	14 10.3	+68 03	23 30	00 04	0058 W	"	comp	1800
	HD 147379	16 16.6	+67 28	00 10	01 10	00	+6724		3600
	BD+68 946	17 36.7	+68 27	01 23	02 24	00 W	+68 30		3600
	HD 149162	16 27.9	+3 28	02 31		W	+0328		3600
	Comp								240

Spectr. Temp. ..... Dome Temp./Hum. 10°C / 60% Transparency Conditions ... Fine .....

Focus .....

Chiller Temp = −31°C
T Electric cooler = 38 mA

Spectr. Temp. ..... Dome Temp./Hum. .....

Comparison Filter	Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	600					BC	1800/52°	BS	pcs 5000Å	IA		wrote ftks 7,200 sec Flat Field earlier	
	120	12								IA	~~stdvel~~	written	
	240*	30	OK	7.2	K2M	*(ushigh as 950 cnts/sec)				IB	std vel	Sky cnts 215 at beginning	
	10	10						BS	5000A	IA			
	30	15	OK	7.6						IB	Asm Sp ftk	Comps done in "IA"	
	Best Frame Saved		SOSO	(Slightly windy)		23×23	pixels	Image Aquisitn mode				seeing fast	
			SOSO			47×47	pixels	guiding mode, above fiber slot				" "	
	300	15	SOSO	8.2	dG6	BC	1800/52°	BS	pcs	IB	Fe A comp	Between	
	450	12	"	"	"	"	"	"	"	IA	Asm Sp ftk	Repeat [note noise beyond Fiber]	
	30	8	~~SO SO~~ ~~OK~~	B=96	KO	"	"	"	"	IB	Asm Sp	No Lights on either FIFO	
	10	7				"	"	"	"	IA	(earlier, sometimes "B" FIFO did have lights for a period)		
	30	5	poor	[Both	FIFO's	have great lights now]			"	IB	Asm Sp ftk		
	50	5	POOR	8.3	M0					IB	" "		
	40	5	poor	9.2	M5					IB	" "	Field drawn on card	
	30	5		9.1	dK0					IA	" "	~~Field drawn~~ on card.	
	10	9								IA			

349 pg #2

Date May 13/17 Cont. Observers NSR - TN

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Fm 0000 47.TN	HD 171232					0 W		Int x 4	
	n	1988 18 32.1	+25 28	04 06	04 20	W	+25 39		800
	Last Comp							Fe A Clear	240
	Seeing Tests (Fm 0000 47.TN) has 9 frames, 1st 3 are repeat of 46.TN								
	2nd 3 frames are The 47x47 pixel box of fiber optic head views.								
	Flat Field (still Labeled "LAST Comp)				end 06 34 20	0 0	platform	Tung 4=1/16	360

Spectr. Focus Spectr. Exp. Mtr

Spectr. Temp. ..... Dome Temp./Hum 14 / 70 Transparency Conditions 350

Focus .....

Spectr. Temp. ..... Dome Temp./Hum 14°C / 70%

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	ok			31×31	(No wind anymore)	2,			Seeing Test	Last 3 Frames of 9	
300 6	ok	7.7	G8III		1800/52°	BS		IB	std vel		
110 10								IB	[Had to do "Cold Start" before last comp]		
300, 80					1800/52	BS		IB			

351 Mon-Twos

Date MAY.16-17.1988. Observers Mti - TS

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Long Flat					0 0	platform	Fang A=1/16	7200
	Long Comp	(				0 0	platform	Fe A	600
	HD 132737			01 28	01 48	W	+27 23		1200
								Fe A Clear	
	BM Cass	1988 00 53.9	+64 01	02 03	02 33	E	+64 08		1800
	Fe AR Comp			02 35				Fe A Clear	240
	BM Cass			02 41	02 52	E			1800
	Fe Ar Comp								240

Spectr. Temp. ..... Dome Temp./Hum. ...../957. Transparency Conditions Clear by DI. EST 352

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Comp. Filter	Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	500	65				6c	1800/52°	BS	5000Å				
	30	15	OK	V 80	KOIII	BC	1800/~~2~~°			IA	std vel	Times 30 sec. slow.	
	18	5								IB			
	10	8	~~poor~~ ~~bad~~	V= 9						IA			
	10	5								IB			
	5	10	poor	V= 8.8→ 9.3						IA		Hz/Hel duo to cloud	
										IB			

353 Tues-Wed

1.56, 0.21
2.12, 0.08

Dev May 20 T_4 Emulsion Batches: IIa-O e 2A7 — Apr 28

Date MAY 17-18/55 Observers MST-T.H.

* Dev MAY 20 T_4 IIIa-F g 1A7 — Apr 25

*(Temperature bear 68°F.)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50256	HD 103095	11 47.2	+38 26	23 48	02 05	5 43 W	+37 59	Fe ARC Clear	1160 800 1050
50256T	Spot Calib for 50256, 60, 61.				15min @ 15V D4 3400		D3 4300	D2 4810	
50257	HD 137909	15 23.7	+29 27	02 12	02 37	2 38 W	+29 18	Fe ARC Clear	2000 2013
50257T	Spot Calib for 50257-59				15min @ D4 17.5V 3400		15V 4300	15V 4810	
50258	HD 159561	17 30.3	+12 38	02 46	02 52	00 43 W	+12 43	Fe ARC Clear	2000 1952
50259	HD 182640	19 20.5	+2 55	02 57	03 26	00 30 E	+3 16	"	2000 2000
50260	HD 8890	01 22.6	+88 46	03 38	03 44	E	+89 20	"	1100 1150
50260	"	"	"	03 50	03 54	07 E	"	"	2000
								"	

Spectr. Temp. 55°F Dome Temp./Hum. 10°C / 86% Transparency Conditions. Part. Clear - Hazy

Focus 391

Spectr. Temp. 57°F Dome Temp./Hum. 8°C / 90%

Astro -> Sid Time seems wrong.
Astro EST OK though

354

Exp. Mtr. B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3500	SoSo										
2410	OK	7.2	G8 IV	BC	1200/5017	BS	IIaO-e	1	Asm Sp Hk	Note Set only 2' Not processed	Work
							IIaO-e				v.
30,100	SoSo	393	F0p	BC	1200/5017	BS	IIIaJ-eg	1	Asm Sp Hk		
							IIIaJ-eg				vv
29550	OK	2.2	A5 III	BC	1200/5017	BS	IIIaJ-eg	1	Asm Sp Hk		
35,300	~~SoSo OK~~ POOR SoSo	3.68	F0 IV	"	"	"	"	1	"		
10,200	SoSo	2.	F	"	"	"	IIIaO-e	1	"	maybe fogged - PH came up Hk came	v
	"	"	"	"	"	"	"	1	"		v.
				"	"	"	IIaO	1			

Emulsion Batches:
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Date ..... Observers .....
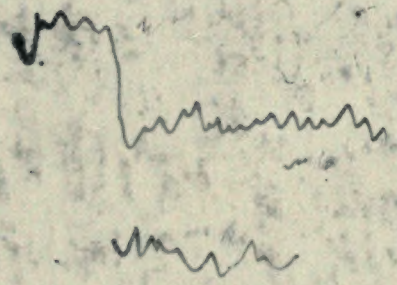
Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Ex